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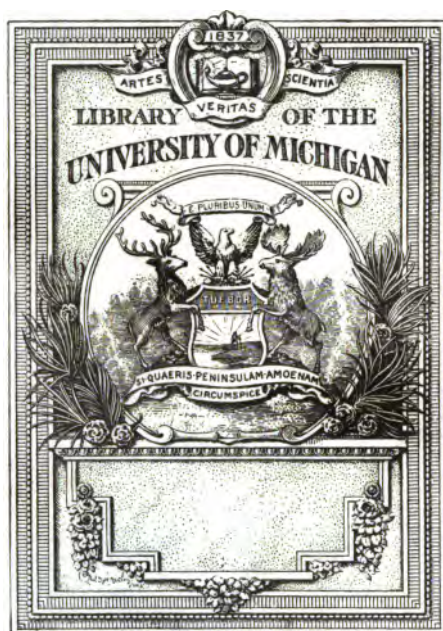
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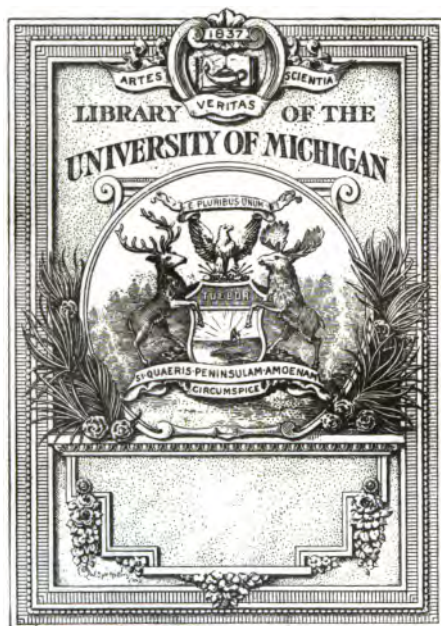
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 servatory
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 17 Haystack Monument
 45 Heating Plant
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 44 Hopkins Observatory
 16 Infirmary
 55 Jesup Hall
 50 Library, Lawrence
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 54 Morgan Hall
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 61 Thompson Biological
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- 60 Thompson Chemical
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 56 Thompson Physical
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 76 Φ. Z. K. House
 71A X. Ψ. Lodge
 21 Σ. Φ. Place
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 79 St. Anthony Hall
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 20 Congregational Church
 11 Episcopal Church
 41 Methodist Church
 34 Roman Catholic
 Church
- 24 Williams Inn
 6 Greylock Hotel
 47 The Cosmo
 75 Pilgrim Inn
- 32 Street Railway
 Terminus
 48 Post Office
 47A National Bank
 47A Savings Bank
 76A Taconic Golf Club

CATALOGUE

OF

WILLIAMS COLLEGE

1912-1913



WILLIAMSTOWN, MASS.

PUBLISHED BY THE COLLEGE

1912

[illegible]

CALENDAR

1912

June 26—CommencementWednesday
July 1—Last day for re-application for scholarships.....Friday

SUMMER VACATION OF TWELVE WEEKS

Sept. 13-18—Examinations for admission,
Fri., Sat., Mon., Tues., Wed.
Sept. 17-19—Registration of all classes, Tues., Wed., Thurs. morning
Sept. 19—Beginning of the College Year.....
Oct. 5—Last day for registering for the Master's degree, Saturday
Oct. 9—Mountain Day, a holiday.....Wednesday
Oct. 10—Meeting of the Board of Trustees.....Thursday
Nov. 27-29—Thanksgiving Recess..Wed. 12:00 M. to Fri. 1:30 P. M.
Dec. 19—Christmas Recess begins.....Thursday, 4:30 P. M.

1913

Jan. 2—Christmas Recess ends.....Thursday
Jan. 20-25—Registration for second semester...Mon. through Sat.
Jan. 29—Recitations endWednesday
Jan. 30—Semi-annual examinations begin.....Thursday
Feb. 8—First semester ends.....Saturday

Feb. 9—Second semester begins.....Sunday
Feb. 22—Washington's Birthday, a holiday.....Saturday
Mar. 19—Easter Recess begins.....Wednesday, 4:30 P. M.
Mar. 26—Easter Recess endsWednesday
May 8—Meeting of the Board of Trustees.....Thursday
May 19-24—Registration for next semester.....Mon. through Sat.
May 30—Memorial Day, a holiday.....Friday
June 7—Recitations endSaturday
June 9-18—Semi-annual examinations.....Mon. through Wed.
June 16-21—Examinations for admission.....Mon. through Sat.
June 23—Graves Prize Speaking.....Monday morning

CONTENTS

	PAGE
MAP	Frontispiece
COLLEGE CALENDAR	3
LIST OF PRESIDENTS	7
BOARD OF TRUSTEES	7
COMMITTEES OF THE BOARD OF TRUSTEES	8
ALUMNI OFFICERS AND VISITORS	9
OFFICERS OF INSTRUCTION	10
OFFICERS OF ADMINISTRATION	14
FACULTY COMMITTEES	15
HISTORICAL SKETCH OF THE COLLEGE	17
CHARTER OF THE FREE SCHOOL	17
LEGISLATIVE GRANT OF THE FREE SCHOOL	21
CHARTER OF THE COLLEGE	22
LEGISLATIVE GRANTS OF THE COLLEGE	27
PRINCIPAL COLLEGE BUILDINGS	28
REQUIREMENTS FOR ADMISSION	29
DETAILS OF SUBJECTS	31
ARRANGEMENT OF EXAMINATIONS	49
COLLEGE ENTRANCE EXAMINATION BOARD	49
PRELIMINARY EXAMINATIONS	50
ADMISSION BY CERTIFICATE	51
ANTICIPATION OF COLLEGE COURSES	54
GRADUATION IN THREE YEARS	54
ADMISSION TO ADVANCED STANDING	54
CURRICULUM	56
GENERAL DESCRIPTION	56
THE GROUP SYSTEM	56
FRESHMAN YEAR	56
SOPHOMORE YEAR	57
JUNIOR AND SENIOR YEARS	57
GRADES	57
COMPLETION OF COURSES	58
GRADUATION	58
BACHELOR OF ARTS	58
EXHIBIT OF DIVISIONS AND GROUPS	60
EXHIBIT OF FRESHMAN STUDIES	62
GROUPS OF HOURS	63
COURSES OF INSTRUCTION	64
LANGUAGES	64
PHILOSOPHY	79

COURSES OF INSTRUCTION— <i>cont.</i>	PAGE
SCIENCES	88
PHYSICAL TRAINING	98
ORDER AND DISCIPLINE	100
HONOR SYSTEM	100
REGISTRATION	100
ATTENDANCE ON COLLEGE EXERCISES	101
MASTER OF ARTS	101
RECORDS AND REPORTS	104
PUBLIC WORSHIP	105
PREACHERS TO THE COLLEGE	105
LIBRARY	106
LABORATORIES	107
OBSERVATORIES	108
GEOLOGICAL MUSEUM	109
GYMNASIUM	110
COLLEGE INFIRMARY	111
WILLIAMS INN	111
PRIZES	112
PHI BETA KAPPA	117
HONORS	118
LYCEUM OF NATURAL HISTORY	119
CLASSICAL SOCIETY	119
LIBRARY ART COLLECTION	119
THOMPSON COURSE OF ENTERTAINMENTS	120
FIELD SPORTS	120
WILLIAMS COLLEGE GREEK FELLOWSHIP	120
SCHOLARSHIPS	121
HONOR SCHOLARSHIPS	121
GENERAL SCHOLARSHIPS	121
SCHOLARSHIP FUNDS	124
EXPENSES	126
COLLEGE ROOMS	127
COMMONS	129
PRIZES AWARDED IN 1912	130
HONORS AWARDED AT COMMENCEMENT, 1912	133
HOLDERS OF SCHOLARSHIPS	134
COMMENCEMENT APPOINTMENTS IN 1912	136
DEGREES CONFERRED IN 1912	137
STUDENTS	139
SUMMARIES	154
ALPHABETICAL LIST OF NAMES	156
INDEX	164

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11

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13

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1912-13

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WILLIAMS COLLEGE

The college owes its origin to an educational bequest of Colonel Ephraim Williams for the purpose of establishing "a Free School" in Williamstown. The charter of this school, which was granted March 8, 1785, reads as follows:

AN ACT for directing the use and appropriation of a charitable donation, made in a certain clause in the last will and testament of Ephraim Williams, Esq., for the support and maintenance of a Free School in Williamstown, in the County of Berkshire; and for incorporating certain persons as trustees, in order more effectually to execute the intention of the testator, expressed in the same.

WHEREAS, Israel Williams, Esq., and John Worthington, Esq., executors of the last will and testament of Ephraim Williams, Esq., deceased, have represented to this court that the said Ephraim Williams, on the twenty-second day of July, Anno Domini one thousand seven hundred and fifty-five, made his last will and testament, in which, after divers bequests, devises, and dispositions, is contained the following clause, viz.:

Item: "It is my will, desire, and pleasure that the remaining part of the lands, not yet disposed of, shall be sold at the discretion of my executors, within five years after an established peace; and the interest of the money and also the interest arising from my bonds and notes shall be appropriated towards the support and maintenance of a Free School, in a township west of Fort Massachusetts, commonly called the West Township, forever; provided, the said township shall fall within the jurisdiction of the Province of Massachusetts Bay; and provided, also, the Governor and General Court give the same township the name of Williamstown; and it is further my will and desire, that if there should remain any monies of the said above donation for the school, it be given towards the support of a school in the East Township, where the fort now stands; but in case the above provisos are not complied with, then it is my last will and choice that the interest of the

above-mentioned monies be appropriated to some pious and charitable uses, in manner and form as above directed in the former part of my last will and testament."

And, whereas the said executors have further represented that it may be a matter of doubt and uncertainty whether the township mentioned in the above recited clause (which is now incorporated by the name of Williamstown) has so far fallen within the jurisdiction of the Province of Massachusetts, now Commonwealth of Massachusetts, in the sense of the testator, as that they might be justified in appropriating the said donation to the support and maintenance of a Free School in said town; and have submitted their duty to the determination of this court, praying that an act may be passed to declare their duty, and to indemnify them in the execution of the same.

SECTION 1. Be it enacted by the Senate and the House of Representatives, in General Court assembled, and by authority of the same, that the donation made in the clause before recited ought to be presently applied to the use and maintenance of a Free School in the town of Williamstown, in the County of Berkshire, and that in case the said donation shall afford an annual interest more than sufficient for the supporting and maintaining such school in Williamstown, then the surplusage be appropriated to the use and maintenance of a Free School in the tract of land called by the testator East Township, now incorporated by the name of Adams, with other lands, applying and appropriating the said donation to the uses above expressed, and shall be liable to no action or suit in law or equity, on account of such appropriations.

And, whereas the said executors have further prayed that for carrying into complete execution the intention of the testator, a corporation may be created and vested with such powers as may be necessary for that purpose;

SECTION. 2. Be it therefore enacted by the authority aforesaid, that William Williams of Dalton, Theodore Sedgwick, Woodbridge Little, John Bacon, Thompson Joseph Skinner, Esquires, the Reverends Seth Swift and Daniel Collins, Mr. Israel Jones and Mr. David Noble, and their successors, to be elected and appointed as hereinafter directed and provided, be, and hereby are, incorporated, and shall be a corporation forever by the name of "The Trustees of the donation of Ephraim Williams, Esq., for maintaining a Free School in Williamstown"; and that the said trustees and their successors

be, and hereby are, vested with all the powers, rights, and immunities, which are by law incident to aggregate eleemosynary corporations.

SECTION 3. And be it further enacted, that the said corporation shall always consist of a number not less than seven, nor more than nine persons, excepting only that whenever a vacancy shall happen by death, removal, refusal, or resignation of any member or members, so that the number be reduced to less than seven, the aforesaid number, then the remaining or surviving trustees shall have full power to perform all corporate acts until such vacancy be supplied; and the said trustees shall elect and appoint a clerk of the corporation, who shall fairly enter and record all votes, acts, orders, and proceedings made, done or passed by the trustees; and shall elect a proper person to be their treasurer, who shall receive into his hands all monies belonging to the corporation and pay the same pursuant to the order of the trustees, and shall always keep a fair account of all receipts and payments.

SECTION 4. And be it further enacted, that the power of electing and appointing successors in case of the death, removal, refusal, or resignation of any of the trustees be, and hereby is, vested solely in the Supreme Judicial Court of this Commonwealth; and whenever any of the above-mentioned cases shall happen, the trustees shall, as soon as conveniently may be, certify the same to the Justices of the said court, that a successor may be appointed; and the Justices of the same court are hereby empowered to remove from office and trust any member of the corporation who shall, in their judgment, be unfit to hold the same, by reason of incapacity, misdemeanor, negligence or breach of trust.

And to the intent that the said donation may not be wasted, mismanaged, or perverted from its original intention;

SECTION 5. Be it further enacted by the authority aforesaid, that the said corporation, and the donation itself, shall always be under the visitation and direction of the Supreme Judicial Court, who are hereby empowered to visit the said corporation to rectify all abuses, to determine all matters of doubt or dispute touching the duty of the trustees, and the use, application, or appropriation of monies or interests to the same donation belonging; and to make all such orders and regulations with respect to the use, management, and appropriation of the same donation and every part thereof, as they

shall judge necessary or useful in order to promote the best interest of the school, according to the true meaning and intention of the testator and such laws of this Commonwealth as may be in force respecting the same; and the said court, whenever they shall judge necessary, shall cause the said trustees to come before them, either to render an account of expenditures and dispositions of monies, or to answer for any mismanagement or breach of trust; and the trustees shall appear and lay their accounts, papers, records, and corporation books before the said court for inspection, whenever they shall be required thereto.

SECTION 6. And be it further enacted, that the said trustees and their successors forever shall have the possession, management, and disposition of the whole interest and estate, real and personal, which is contained in and given, bequeathed, devised, or disposed of by the above recited clause in the will aforesaid; and they are hereby empowered and directed, as soon as conveniently may be, to erect and maintain a Free School within the said town of Williamstown, for the instruction of youth, in such manner as most effectually to answer the pious, generous, and charitable intention of the testator, and agreeable to such orders and instructions as they may, from time to time, receive from the Supreme Judicial Court; and they are hereby empowered to appoint and employ instructors, masters, and officers, as shall be necessary for that purpose.

And to the intent that the said trustees may be enabled, in the most easy and expeditious manner, to receive in their own possession and management, the whole estate, property, and interest, contained in the aforesaid donation;

SECTION 7. Be it further enacted by the authority aforesaid, that the said executors shall, at the request of the trustees, make and execute to the said trustees a deed or deeds of conveyance of all such lands or real estate as belong to said donation, and yet remain unsold, in which deed or deeds it shall be expressed that the executors do grant to the trustees the right, estate, and interest of the testator, and of themselves, in and to the described lands or tenements to the trustees and their successors forever; and the said executors shall deliver over into the hands of the trustees, at their request, all such personal securities or mortgages as the executors now have in their own hands, and which are a part of the same donation; all of which securities, whether bonds, promissory notes, mortgage deeds, or of what name or description soever, being endorsed with the names of the said executors, or one of them,

and delivered as aforesaid, shall become the property of the trustees to all intents and purposes; and they are hereby empowered, in the name of the corporation, to bring any action or actions against the obligors, promisors, mortgagors, or tenants, for recovering the contents of the same securities, or possession of mortgaged estates, which action or actions shall be holden to be good and valid in law for that purpose, as if the securities or mortgage deeds had been originally made to the trustees by their corporate names.

And, whereas the testator has directed, that in case his principal donations should afford an interest more than sufficient for the support and maintenance of the school in Williamstown, the surplusage should be improved to the use of a school in the East Township, now called Adams, in the said County of Berkshire; and whereas questions and disputes may arise touching the (nature) meaning and extent of this part of the will, and where there may be said to be a surplusage beyond what should be necessary, according to the intent of testator, for the support of the school in Williamstown;

SECTION 8. Be it further enacted, that in case of such surplusage, the said trustees are hereby empowered and directed to use and employ the same for erecting and supporting a Free School in the said town of Adams, in the same manner as has been in this act before provided in respect of the school in Williamstown; and that all questions and disputes that may arise concerning such surplusage, and the duty of the trustees in respect of the several schools, shall be determined by the Supreme Judicial Court; and the trustees shall always conform their conduct and administration herein to such orders and determinations as shall, from time to time, be made by the same court.

SECTION 9. And be it further enacted, that the Supreme Judicial Court may, at their discretion, exercise all the powers vested in them by virtue of this act, at any of the sessions holden within the counties of Berkshire or Hampshire; and in all trials at law, the court, ex-officio, shall take notice of this act to all intents and purposes whatsoever, and the same shall be given in evidence under any general issue.

At their first meeting, April 24, 1785, the trustees passed a resolution to the effect that "it is the sense of the corporation that the Free School in Williamstown be open and free for the use and benefit of the inhabitants of that town

and of the free citizens of the American States indiscriminately." They also decided that "it will best coincide with the liberal views of the donor and the intention of the legislature to admit no pupil to the Free School * * * not having been taught to read English well."

As they found it difficult to collect the necessary funds for erecting a building, the trustees sent a petition, August 19, 1788, to the legislature, "for the grant of a lottery to raise the sum of twelve hundred pounds." Accordingly an act was passed February 11, 1789, making such a grant.

The initial step toward a transformation of the Free School into a college was taken at a meeting of the trustees, May 23, 1792. In a petition to the legislature they "humbly showed" what had been done already, and set forth the "several circumstances attending the situation of the Free School * * * peculiarly favorable to a seminary of a more public and important nature." The petition was granted, and an act to establish the college and to transfer to it the property of the Free School was passed June 22, 1793:

An act to establish a college in the County of Berkshire, within this Commonwealth, by the name of Williams College.

Be it enacted by the Senate and House of Representatives, in the General Court assembled, and by the authority of the same, that there be erected and established in the town of Williamstown, in the County of Berkshire, a college for the purpose of educating youth, to be called and known by the name of Williams College, to be under the government and regulation of a body politic and corporate, as hereafter in this act provided.

And be it further enacted by the authority aforesaid, that John Bacon, Esq., Rev. Daniel Collins, Israel Jones, Woodbridge Little, David Noble, Theodore Sedgwick, Thompson J. Skinner, Esquires, Rev. Seth Swift, Henry Vanscaak, Esq., Rev. Stephen West, D.D., William Williams and Elijah Williams, Esquires, together with the president of the said college for the time being, to be chosen as in this act is hereafter directed, be and hereby are created a body politic and corporate, by the name of "The President and Trustees

of Williams College," and that they and their successors, and such others as shall be duly elected members of the said corporation, shall be and remain a body politic and corporate, by that name forever.

And be it further enacted by the authority aforesaid, that for the more orderly conducting the business of the said corporation, The President and Trustees shall have full power and authority from time to time, as they shall determine, to elect a vice president and secretary of the said corporation and to declare the tenures and duties of their respective offices and also to remove any trustee from the said corporation, when, in their judgment, he shall be rendered incapable, by age or otherwise, of discharging the duties of his office or shall neglect or refuse to perform the same, and to fill up all vacancies in the said corporation, by electing such persons for trustees as they shall judge best. Provided, nevertheless, that the number of the said trustees, including the president of the said college, for the time being, shall never be greater than seventeen nor less than eleven.

And be it further enacted, that the said corporation may have one common seal, which they may change, break or renew, at their pleasure; and that all deeds signed and delivered by the treasurer, and sealed with their seal, by order of the President and Trustees, shall, when made in their corporate name, be considered in law as the deed of the said corporation; and that the said corporation may sue and be sued in all actions, real, personal or mixed, and may prosecute and defend the same to final judgment and execution, by the name of the President and Trustees of Williams College; and that the said corporation shall be capable of having, holding and taking in fee simple of any less estate, by gift, grant, devise or otherwise, any lands, tenements or other estate real or personal. Provided, nevertheless, that the annual clear income of the same shall not exceed the sum of six thousand pounds.

And be it further enacted by the authority aforesaid, that the said corporation shall have full power and authority to determine at what times and places their meetings shall be holden and in the manner of notifying the trustees to convene at such meetings; and also from time to time, elect a president and treasurer of said college, and such professors, tutors, instructors, and other officers of said college as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments and tenures of their several officers aforesaid; the said president, for the time being, when elected and inducted into his office, to be, ex-officio, presi-

dent of said corporation. And the said corporation are further empowered to purchase or erect, and to keep in repair, such houses and other buildings as they shall judge necessary for the said college; and also to make and ordain, as occasion may require, reasonable rules, orders and by-laws, not repugnant to the laws of this Commonwealth, with reasonable penalties, for the good government of the said college; and also to determine and prescribe the mode of ascertaining the qualifications of the students, requisite to their admission; and also to confer such degrees as are usually conferred by universities established for the education of youth. Provided, nevertheless, that no corporate business shall be transacted at any meeting, unless seven at least of the trustees are present; and provided further, that the said corporation shall confer no degree other than those of Bachelor of Arts and Master of Arts, until after the first day of January, which shall be in the year of our Lord one thousand eight hundred.

And be it further enacted by the authority aforesaid, that the clear rents, issues and profits of all the estates, real and personal, of which the said corporation shall be seized or possessed, shall be appropriated to the endowment of said college, in such manner as shall most effectually promote virtue and piety, and the knowledge of such of the languages, and of the liberal arts and sciences as shall hereafter be directed from time to time, by the said corporation.

And be it further enacted by the authority aforesaid, that the Hon. Thompson J. Skinner, Esq., be, and he is hereby authorized and empowered to fix the time and place for holding the first meeting of the said corporation, of which he shall give notice by an advertisement in the Stockbridge newspapers, at least fourteen days previous thereto.

And be it further enacted by the authority aforesaid, that the treasurer of the said college shall, before he enter upon the execution of the duties of his office, give bonds to the said corporation, with such sums, and with such sureties as they shall approve of, conditioned for the faithful discharge of the said office, and for rendering a just and true account of his doings therein, when required. And that all the money, securities and other property of The President and Trustees of Williams College, together with all the books in which his accounts and proceedings as treasurer were entered and kept, that shall be in his hands at the expiration of his office, shall, upon demand made upon him, his executors or administrators, be paid and delivered over to his successor in that

office. And all monies recovered by virtue of any suit at law, upon said bond, shall be paid over to the president and trustees aforesaid, and subjected to the appropriation above directed in this act.

And be it further enacted by the authority aforesaid, that the Legislature of this Commonwealth may grant any further powers to, or alter, limit, annul or restrain any of the powers by this act vested in said corporation, as shall be judged necessary to promote the best interest of the said college; and, more especially, may appoint and establish overseers or visitors of the said college, with all necessary powers and authorities for the better aid, preservation and government thereof.

And be it further enacted by the authority aforesaid, that all the property, real and personal, belonging to the trustees of Williamstown Free School, be, and the same hereby is vested in the corporation, which by this act is created.

And be it further enacted by the authority aforesaid, that there be, and hereby is granted to the trustees of Williams College, for the use, benefit and purpose of supporting said college, twelve hundred pounds, to be paid out of the treasury of this Commonwealth; three hundred pounds of the same to be paid the first day of September, one thousand seven hundred ninety-three, and three hundred pounds annually, on the first day of September, for the three succeeding years.

February 26, 1796, an additional act was passed, as follows:

WHEREAS, Doubts have arisen whether the rights and credits which, previous to passing the act aforesaid, were vested in and belonging to the trustees of the donation of EPHRAIM WILLIAMS, Esquire, for maintaining a Free School in WILLIAMSTOWN, are by virtue of the same act transferred to and vested in the corporation of THE PRESIDENT AND TRUSTEES OF WILLIAMS COLLEGE:

Be it therefore enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, that the said rights and credits be and hereby are transferred to and vested in the said Corporation of THE PRESIDENT AND TRUSTEES OF WILLIAMS COLLEGE, who are hereby authorized to commence and prosecute to their final judgment and execution, any suit or action in law or equity, which the said trustees of the donation of EPHRAIM WILLIAMS, Esquire, for maintaining a free school in WILLIAMSTOWN, might heretofore have commenced or prosecuted.

On petition of the trustees the legislature passed an act February 4, 1796, granting the college two townships of land "of the contents of six miles square each, to be laid out and assigned from any of the unappropriated lands belonging to this Commonwealth in the district of Maine." The act provided that the trustees "shall cause to be settled fifteen families in each of said townships within twelve years from the passing this resolve; and also that there be reserved in each township three lots of three hundred and twenty acres each for the following uses, viz., one lot for the first settled minister, one lot for the use of the ministry, and one lot for the use of schools in each of said townships." These lands were sold for about \$10,000, and the proceeds devoted to building East College.

Nine years later the college again appealed to the legislature for assistance. A committee of that body, which investigated the condition and prospects of the institution, made the following report, February 19, 1805:

The Committee of both Houses, to whom was referred the petition of The President and Trustees of Williams College, praying the aid of government to enable them to build a chapel for the performance of divine service, and for keeping the college library and apparatus, having examined the origin, rise, and progress of the seminary, from its institution to the present time, together with the aid heretofore afforded by the government, and the existing state of its funds, beg leave to observe, That the funds granted by the original donor and the government have, in the opinion of the Committee, been judiciously applied to the object of the institution, and with success exceeding the most sanguine expectations, and that the present state of the college affords a reasonable and pleasing expectation of its future extensive benefits to society, and that a chapel for the purposes above mentioned would essentially promote the same; and as the encouragement and grants of the government to that college have not been equal to those made to other seminaries in the Commonwealth, the Committee ask leave to report the following resolve:

Resolved, For reasons set forth in the petition, that there be and hereby is granted one township of land of the contents of six miles

square to be laid out and assigned from any of the unappropriated lands belonging to the Commonwealth, in the District of Maine, except the ten townships lately purchased of the Penobscot Indians. * * *

In 1809 the legislature granted another township of land in Maine "for further aid in support of Williams College and for the erecting of other buildings for the convenience of the institution and for sustaining a professor of the Oriental languages." The sum of \$9,500 was realized from the last two townships.

The legislature passed an act February 24, 1814, "for the Encouragement of Literature, Piety and Morality and the Useful Arts and Sciences," and appropriated the taxes due to the Commonwealth from the Massachusetts Bank, "for the ten years next to come," to Harvard, Williams, and Bowdoin. Of this fund Williams received three-sixteenths parts, which amounted to \$30,000. In 1859 the State gave the College \$25,000 and in 1868, \$75,000. The total of these legislative gifts is \$153,500.

In 1884 the following act was passed:

An act to authorize The President and Trustees of Williams College to hold additional real and personal estate.

[Be it enacted, etc., as follows:]

SECTION 1. The proviso in section 4 of the act establishing Williams College, passed on the twenty-second day of June in the year seventeen hundred and ninety-three, is hereby amended so as to read: "Provided, nevertheless, that the clear annual income of the same shall not exceed two hundred thousand dollars."

SECTION 2. This act shall take effect upon its passage.

In 1890 the legislature passed the following act:

The corporation known as The President and Trustees of Williams College and its standing committees may hold special meetings without the limits of the Commonwealth.

In 1906 the legislature passed the following act:

An act to authorize The President and Trustees of Williams College to hold additional real and personal property.

[Be it enacted, etc., as follows:]

SECTION 1. The proviso at the end of section four of the act establishing Williams College, passed on the twenty-second day of June in the year seventeen hundred and ninety-three, as amended by chapter thirty-nine of the acts of the year eighteen hundred and eighty-three is hereby further amended by striking out the words "two hundred thousand," in the last line of the proviso, and inserting in place thereof the words:—one million,—so that the proviso will read as follows:—Provided, nevertheless, that the clear annual income of the same shall not exceed one million dollars.

SECTION 2. This act shall take effect upon its passage.

The principal college buildings with the dates of their erection are as follows: West College, 1790; East College, 1798, burned in 1841, rebuilt, 1842; Fayerweather Hall, 1905, formerly South College, 1842; Griffin Hall, 1828, moved and remodeled in 1904; Hopkins Observatory, 1837; Lawrence Hall Library, 1846; Goodrich Hall, 1859, formerly the Alumni Hall Chapel, remodeled and converted into recitation and seminar rooms in 1905; College Hall, 1872; Edward Clark Hall, 1908, original structure erected in 1881; Field Memorial Observatory, 1882; Morgan Hall, 1882; Lasell Gymnasium, 1886; Library Extension, 1890; Hopkins Memorial Hall, 1890; Thompson Chemical Laboratory, 1892; Thompson Biological Laboratory, 1893; Thompson Physical Laboratory, 1893; Jesup Hall, 1899; Thompson Memorial Chapel, 1904; Central Heating Plant, 1904; Berkshire Hall, 1905; Currier Hall, 1908; Grace Hall, 1911; Williams Hall, 1911; New Infirmary, 1911.

ADMISSION

All correspondence in matters of admission should be addressed to the Chairman of the Committee on Admissions.

REQUIREMENTS FOR ADMISSION

An application for admission should be filed by every candidate not later than August 1st of the year in which he wishes to enter college. A blank for this purpose can be secured by addressing the Chairman of the Committee on Admissions.

Every candidate for admission must present a testimonial of good character from the principal under whom he was prepared for college. This must be submitted before the attendance on college exercises begins.

Candidates for admission to the Freshman class must present satisfactory qualifications in one of the following groups of subjects, the work covered by each subject being given in detail in the pages following. Students admitted in any of the five admission groups are candidates for the degree of Bachelor of Arts.

ADMISSION GROUP I

English *a* and *b*
Greek *a*, *b*, *c*, and *g*
History *a*
Latin 1, 2, 4, and 5
Mathematics *a* and *c*
An Elective

ADMISSION GROUP II

English *a* and *b*
*French *a* and *b*
History *a*
Latin 1, 2, 4, and 5
Mathematics *a* and *c*
An Elective

* The passing of French *b* does not entitle to credit in French *a*. Both French *a* and French *b* must be passed.—See footnote, p. 49.

ADMISSION GROUP III

English *a* and *b*
 *German *a* and *b*
 History *a*
 Latin 1, 2, 4, and 5
 Mathematics *a* and *c*
 An Elective

ADMISSION GROUP IV

English *a* and *b*
 French *a*
 History *a*
 Latin 1, 2, 4, and 5
 Mathematics *a, b, c, d,* and *f*
 An Elective

ADMISSION GROUP V

English *a* and *b*
 German *a*
 History *a*
 Latin 1, 2, 4, and 5
 Mathematics *a, b, c, d,* and *f*
 An Elective

The Elective required may be chosen by the candidate from the following list, it being understood that no subject specified as a requirement of a particular admission group (like French *a* and French *b* in Admission Group II) may serve as the Elective in that group.

CLASS A

Botany
 Chemistry
 History *b*
 History *c*
 History *d*
 Physics
 Zoölogy

CLASS B

French *a*
 French *b*
 German *a*
 German *b*
 Mathematics *b*
 Mathematics *d*
 Mathematics *f*

The Electives of Class A may be presented by certificate or by examination; those of Class B may be presented by examination only.

The number of year-hours required for graduation is sixty-two, if the candidate offers an Elective of Class A; if he offers an Elective of Class B, the number of hours required for graduation is reduced by one for Mathematics *d* or

* The passing of German *b* does not entitle to credit in German *a*. Both German *a* and German *b* must be passed.—See footnote, p. 49.

Mathematics *f*; by two for Mathematics *b*; and by three for French *a*, French *b*, German *a*, or German *b*. If a candidate offers two or more of the Electives of Class B (selecting those not specifically required in his admission group), the requirement for graduation is diminished by the corresponding total number of hours. (Cf. pages 56-59.)

The details of the requirements in each subject except Botany, Chemistry, and Zoölogy are given in the following pages. English includes in every case English *a* and *b*; Greek includes Greek *a*, *b*, *c*, and *g*; and Latin includes Latin 1, 2, 4, and 5.

For the details of the requirements in Botany, Chemistry, and Zoölogy, see the publications of the College Entrance Examination Board.

The notation used agrees with that of the College Entrance Examination Board.

DETAILS OF SUBJECTS

ENGLISH Preparation in English has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

ENGLISH GRAMMAR AND COMPOSITION

The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, paragraphs, and the different kinds of whole composition, including letter-writing, should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise narration, description, and easy exposition and argu-

ment based upon simple outlines. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by the concerted effort of teachers in all branches to cultivate in the student the habit of using good English in his recitations and various exercises, whether oral or written.

LITERATURE

The second object is sought by means of two lists of books, headed respectively *READING* and *STUDY*, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and encouraged to commit to memory some of the more notable passages both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads and with their places in literary history.

a *READING.* The aim of this course is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

The books provided for reading are arranged in the following groups, from which at least ten units* are to be selected, two from each group:

I. The *Old Testament*, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; the *Iliad*, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI;

* Each unit is set off by semicolons.

Vergil's *Aeneid*. The *Odyssey*, *Iliad*, and *Aeneid* should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II. Shakespere's *Merchant of Venice*; *Midsummer Night's Dream*; *As You Like It*; *Twelfth Night*; *Henry the Fifth*; *Julius Caesar*

III. Defoe's *Robinson Crusoe*, *Part I*; Goldsmith's *Vicar of Wakefield*; either Scott's *Ivanhoe* or Scott's *Quentin Durward*; Hawthorne's *House of the Seven Gables*; either Dickens's *David Copperfield* or *A Tale of Two Cities*; Thackeray's *Henry Esmond*; Mrs. Gaskell's *Cranford*; George Eliot's *Silas Marner*; Stevenson's *Treasure Island*

IV. Bunyan's *Pilgrim's Progress*, *Part I*; The *Sir Roger de Coverley Papers* in the *Spectator*; Franklin's *Autobiography* (condensed); Irving's *Sketch Book*, Macaulay's *Lord Clive* and *Warren Hastings*, Thackeray's *English Humorists*; *Selections* from Lincoln, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the last Public Address, and the Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's *Oregon Trail*; Thoreau's *Walden*, or Huxley's *Autobiography* and selections from *Lay Sermons*, including the address on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*; Stevenson's *Inland Voyage* and *Travels with a Donkey*

V. Palgrave's *Golden Treasury (First Series)*, *Books II and III*, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy in a Country Churchyard* and Goldsmith's *Deserted Village*; Coleridge's *Ancient Mariner* and Lowell's *Vision of Sir Launfal*; Scott's *Lady of the Lake*; Byron's *Childe Harold*, *Canto IV*, and *Prisoner of Chillon*; Palgrave's *Golden Treasury (First Series)*, *Book IV*, with especial attention to Wordsworth, Keats, and Shelley; Poe's *Raven*, Longfellow's *Courtship of Miles Standish*, and Whittier's *Snow Bound*; Macaulay's *Lays of Ancient Rome* and

Arnold's *Sohrab and Rustum*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *Passing of Arthur*; Browning's *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, and *Up at a Villa—Down in the City*.

- b STUDY. This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions.

Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, and *Comus*; either Burke's *Speech on Conciliation with America*, or both Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; either Macaulay's *Life of Johnson* or Carlyle's *Essay on Burns*.

EXAMINATION

However accurate in subject-matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling, or other essentials of good usage.

The examination will be divided into two parts, one of which may be taken as a preliminary, and the other as a final.

The first part of the examination will be upon ten units chosen, in accordance with the plan described earlier, from the lists headed *Reading*; and it may include also questions upon grammar and the simpler principles of rhetoric, and a short composition upon some topic drawn from the student's general knowledge or experience. On the books prescribed for reading, the form of the examination will usually be the writing of short paragraphs on several topics which the candidate may choose from a considerable number. These topics will involve such knowledge and appreciation of plot, character-development, and other qualities of style and treatment as may be fairly expected. In grammar and rhetoric, the can-

didate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors.

The second part of the examination will include composition and those books comprised in the list headed *Study*. The test in composition will consist of one or more essays, developing a theme through several paragraphs; the subjects will be drawn from the books prescribed for *Study*, from the candidate's other studies, and from his personal knowledge and experiences quite apart from reading. For this purpose the examiner will provide several subjects, perhaps five or six, from which the candidate may make his own selections. The test on the books prescribed for study will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

FRENCH

a Elementary French.

The Aim of the Instruction. At the end of the elementary course the pupil should be able to pronounce French accurately, to read at sight easy French prose, to put into French simple English sentences taken from the language of every-day life or based upon a portion of the French text read, and to answer questions on the rudiments of the grammar as defined below.

The Work to be Done. During the first year the work should comprise: (1) careful drill in pronunciation; (2) the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural nouns, the inflection of

adjectives, particles, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence, and the elementary rules of syntax; (3) abundant easy exercises, designed not only to fix in the memory the form and the principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (4) the reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read; (5) writing French from dictation.

During the second year the work should comprise: (1) the reading of from 250 to 400 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches; (2) constant practice, as in the previous year, in translating into French easy variations upon the texts read; (3) frequent abstracts, sometimes oral and sometimes written, of portions of the text already read; (4) writing French from dictation; (5) continued drill upon the rudiments of grammar, with constant application in the construction of sentences; (6) mastery of the forms and the use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and the subjunctive.

Suitable texts for the second year are: About's *Le roi des montagnes*, Bruno's *Le tour de la France*, Daudet's easier short tales, La Bédollière's *La Mère Michel et son chat*, Erckmann-Chatrian's stories, Foa's *Contes biographiques* and *Le petit Robinson de Paris*, Foncin's *Le pays de France*, Labiche and Martin's *La poudre aux yeux* and *Le voyage de M. Perrichon*, Legouvé and Labiche's *La cigale chez les fourmis*, Malot's *Sans famille*, Mairét's *La tâche du petit Pierre*, Mérimée's *Colomba*, extracts from Michelet, Sarcey's *Le siège de Paris*, and Verne's stories. See footnote, p. 49.

b The Intermediate Requirement.

The Aim of the Instruction. At the end of the intermediate course the pupil should be able to read at sight ordinary French prose or simple poetry, to translate into French a connected passage of English based on the text read, and to answer questions involving a more thorough knowledge of syntax than is expected in the elementary course.

The Work to be Done. This should comprise the reading of from 400 to 600 pages of French of ordinary difficulty, a portion to be in the dramatic form; constant practice in giving French paraphrases, abstracts or reproductions from memory of selected portions of the matter read; the study of a grammar of moderate completeness; and writing from dictation.

Suitable texts are: About's stories, Augier and Sandeau's *Le gendre de M. Poirier*, Béranger's poems, Corneille's *Le Cid* and *Horace*, Coppée's poems, Daudet's *La Belle Nivernaise*, La Brète's *Mon oncle et mon curé*, Madame de Sévigné's letters, Hugo's *Hernani* and *La chute*, Labiche's plays, Loti's *Pêcheur d'Islande*, Mignet's historical writings, Molière's *L'avare* and *Le bourgeois gentilhomme*, Racine's *Athalie*, *Andromaque*, and *Esther*, George Sand's plays and stories, Sandeau's *Mademoiselle de la Seiglière*, Scribe's plays, Thierry's *Récits des temps mérovingiens*, Thiers's *L'expédition de Bonaparte en Égypte*, Vigny's *La canne de jonc*, and Voltaire's historical writings.

GERMAN

a The Elementary Requirement.

The Aim of the Instruction. At the end of the elementary course in German the pupil should be able to read at sight, and to translate, if called upon, by way of proving ability to read, a passage of very easy dialogue or narrative prose, help being given upon unusual words and constructions, to put into German short English sentences taken from the language of every-day life or based upon the text given for translation, and to answer questions upon the rudiments of the grammar, as defined below.

The Work to be Done. During the first year the work should comprise: (1) careful drill upon pronunciation; (2) the memorizing and frequent repetition of easy colloquial sentences; (3) drill upon the rudiments of grammar, that is, upon the inflection of the articles, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs, and the more usual strong verbs; also upon the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word-order; (4) abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (5) the reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read.

During the second year the work should comprise: (1) the reading of from 150 to 200 pages of literature in the form of easy stories and plays; (2) accompanying practice, as before, in the translation into German of easy variations upon the matter read and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill upon the rudiments of the grammar, directed to the ends of enabling the pupil, first, to use his knowledge with facility in the formation of sentences, and, secondly, to state his knowledge correctly in the technical language of grammar.

Stories suitable for the elementary course can be selected from the following list: Andersen's *Märchen* and *Bilderbuch ohne Bilder*, Arnold's *Fritz auf Ferien*; Baumbach's *Die Nonna* and *Der Schwiegersohn*; Gerstäcker's *Germelshausen*; Heyse's *L'Arrabbiata*, *Das Mädchen von Treppi*, and *Anfang und Ende*; Hillern's *Höher als die Kirche*; Jensen's *Die braune Erica*; Leander's *Träumereien* and *Kleine Geschichten*; Seidel's *Märchen*; Stökl's *Unter dem*

Christbaum; Storm's *Immensee* and *Geschichten aus der Tonne*; and Zschokke's *Der zerbrochene Krug*.

Good plays adapted to the elementary course are much harder to find than good stories. Five-act plays are too long. They require more time than it is advisable to devote to any one text. Among shorter plays the best available are perhaps Benedix's *Der Prozess*, *Der Weiberfeind*, and *Günstige Vorzeichen*; Elz's *Er ist nicht eifersüchtig*; Wichert's *An der Majorsecke*; and Wilhelm's *Einer muss heiraten*. It is recommended, however, that not more than one of these plays be read. The narrative style should predominate. A good selection of reading matter for the second year would be Andersen's *Märchen*, or *Bilderbuch*, or Leander's *Träumereien*, to the extent of, say, forty pages. After that such a story as *Das kalte Herz*; or *Der zerbrochene Krug*; then, *Höher als die Kirche*, or *Immensee*; next, a good story by Heyse, Baumbach, or Seidel; and, lastly, *Der Prozess*. See footnote, p. 49.

b The Intermediate Requirement.

The Aim of the Instruction. At the end of the intermediate course the pupil should be able to read at sight German prose of ordinary difficulty, whether recent or classical; to put into German a connected passage of simple English, paraphrased from a given text in German; to answer any grammatical questions relating to usual forms and essential principles of the language, including syntax and word-formation, and to translate and explain (so far as explanation may be necessary) a passage of classical literature taken from some text previously studied.

The Work to be Done. The work should comprise, in addition to the elementary course, the reading of about 400 pages of moderately difficult prose and poetry, with constant practice in giving, sometimes orally and sometimes in writing, paraphrases, abstracts, or reproductions from memory of selected portions of the matter read; also grammatical drill upon the less usual strong verbs, the use of articles, cases, auxiliaries of all kinds, tenses and modes

(with special reference to the infinitive and subjunctive), and likewise upon word-order and word-formation.

The intermediate course is supposed to be the elementary course, plus one year's work at the rate of not less than four recitations a week. Suitable reading matter for the third year can be selected from such works as the following: Ebner-Eschenbach's *Die Freiherren von Gemperlein*; Freytag's *Die Journalisten und Bilder aus der deutschen Vergangenheit*—for example, *Karl der Grosse*, *Aus den Kreuzzügen*, *Doktor Luther*, *Aus dem Staat Friedrichs des Grossen*; Fouqué's *Undine*; Gerstäcker's *Irrfahrten*; Goethe's *Hermann und Dorothea* and *Iphigenie*; Heine's poems and *Reisebilder*; Hoffmann's *Historische Erzählungen*; Lessing's *Minna von Barnhelm*; Meyer's *Gustav Adolf's Page*; Moser's *Der Bibliothekar*; Riehl's *Novellen*—for example, *Burg Neideck*, *Der Fluch der Schönheit*, *Der Stumme Ratsherr*, *Das Spielmannskind*; Rosegger's *Waldheimat*; Schiller's *Der Neffe als Onkel*, *Der Geisterseher*, *Wilhelm Tell*, *Die Jungfrau von Orleans*, *Das Lied von der Glocke*, *Balladen*; Scheffel's *Der Trompeter von Säckingen*; Uhland's poems; and Wildenbruch's *Das edle Blut*.

GREEK

- a i Greek Grammar.
- ii Greek Composition. Translation into Greek of sentences based upon Xenophon's *Anabasis*, Books I and II.
- b Xenophon, *Anabasis*, Books I-IV.
- c Homer, *Iliad*, Books I-III (omitting II, 494-end), and the Homeric constructions, forms, and prosody.
- g Translation at sight of prose of no greater difficulty than Xenophon's *Anabasis*.

HISTORY

- a Ancient History, comprising Greek history to the death of Alexander, and Roman to the death of Constantine. Oman's, Botsford's and Myer's Histories of Greece, and Botsford's and Myer's Histories of

Rome are recommended. The related geography is also included.

Ancient History, as defined by the College Entrance Examination Board, extending to 814 A. D., will be accepted as an equivalent.

- b* Mediæval and Modern History, from the death of Charlemagne to the present time. As text-books West's *Modern History* and Harding's *Essentials of Mediæval and Modern History* are recommended. Collateral reading and historical geography should form a part of the work in this subject.

The requirement for History *b*, as outlined by the College Entrance Examination Board, will be accepted.

- c* English History, as defined by the College Entrance Examination Board. Walker's *Essentials in English History*, Cheyney's *Short History of England*, and Andrew's *History of England*, are recommended.

- d* American History, as defined by the College Entrance Examination Board. Hart's *Essentials in American History*, Adams and Trent's *History of the United States*, Channing's *Students' History of the United States*, and McLaughlin's *History of the American Nations* are recommended.

LATIN

NEW REQUIREMENTS

The following requirements in Latin are in accordance with the recommendations made by the Commission on College Entrance Requirements in Latin, October, 1909.

I AMOUNT AND RANGE OF THE READING REQUIRED

(1) The Latin reading, without regard to the prescription of particular authors and works, shall be not less in amount than Caesar, *Gallic War*, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, *Aeneid*, I-VI.

(2) The amount of reading specified above shall be selected by the schools from the following authors and works: Caesar (*Gallic War* and *Civil War*) and Nepos (*Lives*); Cicero (orations, letters, and

WILLIAMS COLLEGE

De Senectute) and Sallust (*Catiline* and *Jugurthine War*); Vergil (*Bucolics*, *Georgics*, and *Aeneid*) and Ovid (*Metamorphoses*, *Fasti*, and *Tristia*).

II SCOPE OF THE EXAMINATIONS

(1) *Translation at Sight.* Candidates will be examined in translation at sight of both prose and verse. In vocabulary, constructions, and range of ideas, the passages set will be suited to the preparation secured by the reading indicated above.

(2) *Prescribed Reading.* Candidates will be examined also upon the following prescribed reading: Cicero, orations for the Manilian Law and for Archias, and Vergil, *Aeneid*, I, II, and either IV or VI, at the option of the candidate, with questions on subject-matter, literary and historical allusions, and prosody. Every paper in which passages from the prescribed reading are set for translation will contain also one or more passages for translation at sight: and candidates must deal satisfactorily with both these parts of the paper, or they will not be given credit for either part.

(3) *Grammar and Composition.* The examinations in grammar and composition will demand thorough knowledge of all regular inflections, all common irregular forms, and the ordinary syntax and vocabulary of the prose authors read in school, with ability to use this knowledge in writing simple Latin prose.

SUGGESTIONS CONCERNING PREPARATION

Exercises in translation at sight should begin in school with the first lessons in which Latin sentences of any length occur, and should continue throughout the course with sufficient frequency to insure correct methods of work on the part of the student. From the outset particular attention should be given to developing the ability to take in the meaning of each word—and so, gradually, of the whole sentence—just as it stands; the sentence should be read and understood in the order of the original with full appreciation of the force of each word as it comes,

so far as this can be known or inferred from that which has preceded, and from the form and the position of the word itself. The habit of reading in this way should be encouraged and cultivated as the best preparation for all the translating that the student has to do. No translation, however, should be a mechanical metaphrase. Nor should it be a mere loose paraphrase. The full meaning of the passage to be translated, gathered in the way described above, should finally be expressed in clear and natural English.

A written examination cannot test the ear or tongue, but proper instruction in any language will necessarily include the training of both. The school work in Latin, therefore, should include much reading aloud, writing from dictation, and translation from the teacher's reading. Learning suitable passages by heart is also very useful, and should be more practised.

The work in composition should give the student a better understanding of the Latin he is reading at the time, if it is prose, and greater facility in reading. It is desirable, however, that there should be systematic and regular work in composition during the time in which poetry is read as well; for this work the prose authors already studied should be used as models.

SUBJECTS FOR EXAMINATION

1. GRAMMAR. The examination will presuppose the reading of the required amount of prose (see I, 1 and 2), including the prose works prescribed (see II, 2).

2. ELEMENTARY COMPOSITION. The examination will presuppose the reading of the required amount of prose (see I, 1 and 2), including the prose works prescribed (see II, 2).

4. CICERO (orations for the Manilian Law and for Archias) and SIGHT TRANSLATION OF PROSE.

5. VERGIL (*Aeneid*, I, II, and either IV or VI, at the option of the candidate), and SIGHT TRANSLATION OF POETRY.

MATHEMATICS

a Elementary Algebra; Algebra to Quadratics and Beyond.

a, i Algebra to Quadratics.

The four fundamental operations for rational algebraic expressions.

Factoring, determination of highest common factor and lowest common multiple by factoring.

Fractions, including complex fractions, and ratio and proportion.

Linear equations, both numerical and literal, containing one or more unknown quantities.

Problems depending on linear equations.

Radicals, including the extraction of the square root of polynomials and of numbers.

Exponents, including the fractional and negative.

a, ii Quadratics and Beyond.

Quadratic equations, both numerical and literal.

Simple cases of equations with one or more unknown quantities, that can be solved by the methods of linear or quadratic equations.

Problems depending on quadratic equations.

The binomial theorem for positive integral exponents.

The formulas for the n th term and the sum of the terms of arithmetical and geometrical progressions, with applications.

It is assumed that pupils will be required throughout the course to solve numerous problems which involve putting questions into equations. Some of these problems should be chosen from mensuration, from physics, and from commercial life. The use of graphical methods and illustrations, particularly in connection with the solution of equations, is also expected.

b Advanced Algebra.

Permutations and combinations, limited to simple cases.

Complex numbers, with graphical representation of sums and differences.

Determinants, chiefly of the second, third, and fourth orders, including the use of minors and the solution of linear equations.

Numerical equations of higher degree, and so much of the theory of equations, with graphical methods, as is necessary for their treatment, including Descartes's rule of signs and Horner's method, but not Sturm's functions or multiple roots.

- c* Plane Geometry. The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle.

The solution of numerous original exercises, including loci problems.

Applications to the mensuration of lines and plane surfaces.

- d* Solid Geometry.

The usual theorems and constructions of good text-books, including the relations of planes and lines in space; the properties and measurement of prisms, cylinders, and cones; the sphere and the spherical triangle.

The solution of numerous original exercises, including loci problems.

Applications to the mensuration of surfaces and solids.

- f* Plane Trigonometry.

Definitions and relations of the six trigonometric functions as ratios; circular measurement of angles.

Proofs of principal formulas, in particular for the sine, cosine, and tangent of the sum and the difference of two angles, of the double angle and the half angle, the product expressions for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas.

Solution of trigonometric equations of a simple character.

Theory and use of logarithms (without the introduction of work involving infinite series).

The solution of right and oblique triangles and practical applications.

Mathematics *b*, *d*, and *f* above together comprise approximately the college course, *Mathematics 1-2*.

PHYSICS

A course of study dealing with the elementary facts and principles of physics and with the applications of physical laws to the experiences of everyday life. The course of instruction should include:

i The study of a standard text-book, or equivalent work by lectures; this study should be illustrated by qualitative lecture-room experiments and should be accompanied by practice in the solution of numerical problems.

ii Individual quantitative laboratory work by the pupil, consisting of at least 30 experiments well distributed through the various divisions of the subject, and similar in character to those found in the list suggested by the College Entrance Examination Board. This work should require at least 30 double periods of the school program.

It is expected that the course will occupy in lectures, recitations, and laboratory work, at least five hours per week for an entire year.

ASSIGNMENT OF UNITS

In the terms of the scale of values adopted by the College Entrance Examination Board, where the unit represents one year's work in a secondary school, with four or five periods per week, the admission subjects listed above have weights assigned as follows:

Botany	1 unit
Chemistry	1 "
English <i>a</i>	2 units
English <i>b</i>	1 unit
French <i>a</i>	2 units
French <i>b</i>	1 unit
German <i>a</i>	2 units
German <i>b</i>	1 unit
Greek <i>a</i>	1 "
Greek <i>b</i>	1 "
Greek <i>c</i>	1 "
History <i>a</i>	1 "
History <i>b</i>	1 "

History <i>c</i>	I unit
History <i>d</i>	I "
Latin 1	I "
Latin 2	I "
Latin 4	I "
Latin 5	I "
Mathematics <i>a</i> , i	I "
Mathematics <i>a</i> , ii	$\frac{1}{2}$ "
Mathematics <i>b</i>	$\frac{1}{2}$ "
Mathematics <i>c</i>	I "
Mathematics <i>d</i>	$\frac{1}{2}$ "
Mathematics <i>f</i>	$\frac{1}{2}$ "
Physics	I "
Zoölogy	I "

ARRANGEMENT OF EXAMINATIONS FOR ADMISSION

Examinations for admission are held twice each year, in June and in September.

In June the entrance examinations of the college are those of the College Entrance Examination Board, of which Williams College is a member. An application for the privilege of taking these examinations must be made to the Secretary of the College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y., from whom all necessary information regarding the June examinations can be obtained. These examinations are held annually in June at a large number of widely distributed points, including Williamstown.

In June, 1913, the admission examinations of this college will be the examinations of the College Entrance Examination Board. The examinations will be held during the week June 16-21, 1913.

All applications for examination must be addressed to the Secretary of the College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y., and must be made upon a blank form to be obtained from the Secretary of the Board upon application.

Applications for examination at points in the United States east of the Mississippi River, also at points on the Mississippi River, must be received by the Secretary of the Board at least two

weeks in advance of the examinations, that is, on or before Monday, June 2, 1913; applications for examination elsewhere in the United States or in Canada must be received at least three weeks in advance of the examinations, that is, on or before Monday, May 26, 1913; and applications for examination outside of the United States and Canada must be received at least five weeks in advance of the examinations, that is, on or before Monday, May 12, 1913.

Applications received later than the dates named will be accepted when it is possible to arrange for the admission of the candidates concerned, but only upon the payment of \$5.00 in addition to the usual fee.

The examination fee is \$5.00 for all candidates examined at points in the United States and Canada and \$15.00 for all candidates examined outside of the United States and Canada. The fee (which cannot be accepted in advance of the application) should be remitted by postal order, express order, or draft on New York to the order of the College Entrance Examination Board.

A list of the places at which examinations are to be held by the Board in June, 1913, will be published about March 1. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary of the Board not later than February 1.

The marks given by the Board to the papers submitted will be accepted by the college on the same terms as the results of the examinations conducted by the college in September. Candidates for admission to Williams College should forward the results of their examinations, as soon as they are received from the Board, to the Chairman of the Committee on Admissions, Williamstown, Mass.

The custom of sending examination papers from the college in June to preparatory schools for the use of candidates preferring to take the Williams College examinations there has been discontinued.

In September the entrance examinations are given only by the college and do not include the subjects, Botany, Chemistry, Physics, and Zoölogy. They will be held for the next college year in rooms 6 and 10, Hopkins Hall, on the Friday, Saturday, Monday, Tuesday, and Wednesday

before the beginning of the first semester, September 12-17, 1913, as follows:

FRIDAY

8 A.M.—*French *a*

2 P.M.—*German *a*

SATURDAY

8 A.M.—†French *b*

2 P.M.—†German *b*

MONDAY

8 A.M.—English *a* and *b*

2 P.M.—Greek *a*, *b*, *c*, and *g*

TUESDAY

8 A.M.—Latin 4 and 5

2 P.M.—Mathematics *a*, *b*, *c*, *d*, and *f*

WEDNESDAY

8 A.M.—History *a*, History *b*, History *c*, History *d*

2 P.M.—Latin 1 and 2

Examinations in Botany, Chemistry, Physics, and Zoölogy are offered in June only.

The passing mark is fifty in all final entrance examinations, and sixty or seventy-five, as explained below, in preliminary examinations.

It is desired that candidates for admission to Williams College by examination take only the examinations offered by the College Entrance Examination Board in June and by the College in September. Official statements showing that candidates have passed entrance examinations at another college or university may be accepted in case the candidate decides to transfer his application for admission from such

* The examination at the College in September includes an oral test on pronunciation.

† Candidates for admission are required to gain credit in French *a* or German *a* before trying French *b* or German *b* respectively in September.—See footnote, pp. 29-30.

other college or university to Williams College. But the examinations of the September in which the candidate seeks admission may not be taken elsewhere than at Williams College.

PRELIMINARY EXAMINATIONS

Preliminary examinations in any of the requirements for admission may be taken a year in advance; but, in accordance with the rules of the College Entrance Examination Board, the candidates for such examinations in June must submit in advance, from the principals of their schools, certificates specifying that their teachers consider them prepared in the subjects selected; while candidates for preliminary examinations in September must submit also satisfactory evidence that they have made a thorough review during the summer. Blank forms for use in submitting evidence of fitness for preliminary examinations in September may be obtained from the Chairman of the Committee on Admissions. Such a form, properly filled out, should be submitted by every candidate not later than one week before the beginning of the September examinations.

The examination will cover the whole of each subject offered by the candidate; for example, Greek *b*, Latin 4, or Mathematics *c* may not be divided between the preliminary and the final examinations.

In order to prevent an interruption to studies which are to be continued in college, candidates are expected to reserve the following subjects for the final examinations: English *b*, Greek *c*, Latin 4 or 5, and Mathematics *a*, *ii* or *c* (or Mathematics *b*, *d*, and *f*, if the admission group is IV or V). The mark required for gaining preliminary credit in these subjects is seventy-five; the passing mark for preliminary credit in all other admission subjects is sixty.

Credit for the preliminary examination will be valid for a year only, unless the examination has been passed in a specially creditable manner; and all credit may be refused unless the applicant pass in a substantial part of the subjects offered.

The times and places of the preliminary examinations, as well as the questions submitted, are the same as for the regular final examinations.

ADMISSION BY CERTIFICATE

Under certain conditions specified below, certificates made out on prescribed forms and signed by the principals of preparatory schools are accepted in place of examinations in Botany, Chemistry, English, Greek, History, Latin, Mathematics *a*, Mathematics *c*, Physics, and Zoölogy. Certificates will in no case be accepted for French *a* or *b*, German *a* or *b*, or Mathematics *b*, *d*, or *f*, or for the anticipation of any course of study offered in college.

No certificate in Mathematics *a* will be accepted unless accompanied by a statement that at least fifty regular recitation exercises have been devoted to a review of Mathematics *a* or to Mathematics *b* or Mathematics *f* during the last preparatory school year.

The certificates of the schools approved by the New England College Entrance Certificate Board are accepted, in accordance with the regulations of the college and subject to the rules of the Board, for admission to Williams College. Certificates are not accepted from any schools in New England which lack the approval of that Board. Principals of schools in New England who desire the certificate privilege should address the Secretary of the Board, Professor Nathaniel F. Davis, LL.D., 159 Brown St., Providence, R. I. Applications for approval must be received

by the Secretary before April 1st in order to be approved for the next college year.

Application for the certificate privilege for schools outside New England should be made by the principal on a blank provided for the purpose by the Chairman of the Committee on Admissions.

These applications will ordinarily be granted if the school has at least one candidate already nearly prepared for admission to Williams College and if the Faculty of the college has such information concerning the work of the school as seems to it to warrant. In general, a school which has recently sent properly trained students by examination is considered entitled, on application, to receive the certificate privilege and to retain it as long as there is no radical change in the efficiency of the school; but any school will be dropped from the approved list whenever for a period of five years it has sent no students to the college.

The certificate privilege is not granted to private tutors and it is not to be used for any work done with private tutors, but only for work done regularly in the school whose principal signs the certificate.

The certificate privilege is revocable in all cases where, in the opinion of the Faculty of the college, it is not properly exercised.

Certificates must be made out on blank forms furnished by the Chairman of the Committee on Admissions, and in accordance with the instructions contained therein. These certificates must contain an explicit statement of the work done by the candidates and the time devoted to it. If the certificate covers less than two-thirds of the total of the certificate subjects in the admission group in which the candidate proposes to enter, the certificate will not be accepted. If the time devoted to a given subject seems inadequate, the certificate may be rejected for the subject in which such deficiency appears, though it may remain valid

for other subjects. In such cases an examination upon the subjects involved will be required. For slight deficiencies conditions may be imposed.

A student who has failed to pass the admission examinations in September at this or any other college will not be admitted by certificate unless he has had, since such failure, at least a year of study in the school whose principal issues the certificate.

Freshmen who have entered by certificate and have subsequently been dismissed for failure in their studies may re-enter with the next class on such terms as the Committee on Admissions may prescribe.

When a year or more has passed between the completion of the work for which the certificate vouches and the time for the student to enter college, satisfactory evidence that he has kept up his studies in the interval is required.

Certificates must be signed by the principal of the school (or some one duly qualified to act in his stead) and are to be sent to the Chairman of the Committee on Admissions before July 15th, so far as is practicable, but not in advance of the actual completion of the work for which they vouch. All certificates should be submitted at least as early as the first of September.

Blank certificates will be sent to the principal of any approved school on request, but they are not sent to other persons.

The diplomas "with honor,"—and marks as high as seventy-five per cent. in individual subjects,—gained at the examinations of the Board of Regents of the State of New York, are accepted for admission purposes on the same terms as the certificates of approved schools.

All correspondence in matters of admission should be addressed to the Chairman of the Committee on Admissions.

ANTICIPATION OF COLLEGE COURSES

I *Subjects in the Admission Groups*

Any college course included in the admission groups of pages 29 and 30 of this catalogue will be counted towards a degree, if offered in addition to the subjects required in the chosen admission group. The examinations in such additional subjects are the regular examinations for admission and are to be taken at the appointed times in June and September.

The college courses which may be anticipated thus by passing the corresponding admission examination in June or September are the following:—*French 1-2, French 3-4, German 1-2, German 3-4, and Mathematics 1-2.*

II *Subjects not in the Admission Groups*

Any student may be allowed, by special vote of the Faculty, to anticipate by examination a course of study not included among those mentioned in the above paragraph, if he gives evidence of having had satisfactory instruction in the subject in some school or college. In such anticipatory examinations, a grade as high as B is required.

GRADUATION IN THREE YEARS

A student who is able to anticipate at admission, in accordance with the above rules, two college courses, may, by taking the requisite number of extra courses, complete the requirement for graduation in three years; but the Faculty will decline to permit a student to undertake this unless his general scholarship is of high character.

ADMISSION TO ADVANCED STANDING

Students who come from other colleges and who bring certificates of honorable dismissal may, on proof of their

qualifications, be admitted to a corresponding standing in this college.

All correspondence in matters of admission to college should be addressed to the Chairman of the Committee on Admissions.

CURRICULUM

GENERAL DESCRIPTION

The curriculum of Williams College provides, in the first place, for the continuation of the principal subjects offered at entrance by prescribing in the Freshman year the study of Latin, English, Mathematics and the other language of the admission group in which the student enters, together with Elementary French or German. In the second place, by organizing the courses of the last three years in eleven Major Groups arranged in three Divisions, the curriculum secures the concentration of part of the student's work in one well defined field and the distribution of another part among different subjects. A Major Group consists in general of a Sophomore introductory course, three prescribed courses in Junior year and two advanced year-courses in the Senior year. The rest of the student's work is elective, subject to the requirement that in Sophomore year he shall take at least one course in each Division, and, after Sophomore year, at least one year-course from each of the two Divisions in which his Major Group is not placed. The Exhibit of Divisions and Major Groups is given on pages 60-61. All elections are subject to the prerequisites published on pages 64-99.

FRESHMAN YEAR

In the Freshman year each student must take Latin, English, Mathematics, and two of the three languages Greek, French, and German. If a student has anticipated any

required course of the Freshman year (see p. 62), he may substitute therefor any Sophomore course for which he has had the proper prerequisite.

SOPHOMORE YEAR

The student must take four courses, at least one in each Division, from among those open to Sophomores. One of these shall serve as the introductory course of the Major Group which is to be selected at the end of the Sophomore year.

JUNIOR YEAR

Each student must take the three courses of the Major Group that he has selected. He must also elect two other courses. Either in this year or the next, one course at least must be taken in each of the two Divisions other than that in which the Major Group is placed.

SENIOR YEAR

Each student must complete his Major Group by taking two year-courses or their equivalent in semester-courses from among those comprised in the Group. He must also elect at least two other year-courses or their equivalent, completing, if he has not already done so, the requirement of one course after Sophomore year in each of the two Divisions other than that in which the Major Group is placed.

GRADES

The grade system of marking used is defined as follows:

There shall be five grades, indicated thus: A, "excellent"; B, "good"; C, "fair"; D, "passable"; E, "failure."

The interpretation of the several grade names, "excellent," "good," "failure," etc., rests wholly with the judgment of the individual instructor.

COMPLETION OF COURSES

A course will be considered satisfactorily completed for any semester when the student has obtained a grade as high as D based on both the daily work (which shall include all oral or written exercises prior to the semi-annual examination) and the semi-annual examination. A student failing to obtain a grade as high as D must, if the course is required, repeat it the following year, or, in case of French 1-2, French 3-4, German 1-2, German 3-4, or Mathematics 1-2, pass the corresponding entrance examination in September with a grade as high as D.

GRADUATION

The number of semester-hours required for graduation is 124 (62 year-hours); but every student, in order to be graduated, must have attained a grade above D in at least one-half the number of hours required for graduation; and all courses regularly taken in the Senior year must be passed, even though they may not be necessary for completing the number of hours indicated above.

BACHELOR OF ARTS

The Degree of Bachelor of Arts is conferred by vote of the Trustees at the annual Commencement upon students who have completed the requirements as to courses, hours, and grades to the satisfaction of the Faculty (see pp. 57-

58), have paid to the Treasurer all college dues and other college charges, and have returned all books belonging to the library; but the degree may be forfeited by misconduct at any time previous to the close of the Commencement exercises.

EXHIBIT OF DIVISIONS AND GROUPS

Odd numbers refer to the first semester, even numbers to the second semester. Year-courses have their two semester numerals joined by a hyphen.

DIVISIONS	MAJOR GROUPS	FRESHMAN COURSES	SOPHOMORE COURSES	JUNIOR GROUPS	SENIOR ELECTIVES
I	GREEK	{ Greek 1-2	Greek 3-4	a. Greek 5-6 b. Latin 3-4 c. Greek 11- History 12	Greek 7 Greek 8 Greek 9 Greek 10 Latin 5-6 Latin 7 Latin 8
	LATIN	{ Latin 1-2	Latin 3-4	a. Latin 5-6 b. Greek 3-4* for (German non-Greek men) c. Greek 11- History 12	Greek 5 Greek 6 Greek 7 Greek 8 Greek 9 Greek 10 Latin 7 Latin 8
	FRENCH	{ French*	French*	a. French* b. Italian 1-2 c. History 1-2 (Hist. 5-6)	French* Italian 3-4 Spanish 1-2
	GERMAN	{ German*	German*	a. German* b. Literature 9-10 c. History 1-2 (Hist. 5-6)	German* German*

*The modern language courses of Freshman year in the French and German groups will be determined by the admission record of the student. The modern language courses after Freshman year will follow in sequence. See announcements of the departments of German and Romance Languages.

ENGLISH	Rhetoric 1-2	Literature 1- Rhetoric 4	Literature 3-4 Literature 5-6 Rhetoric 5-6	Literature 7 Literature 8 Literature 9-10 Literature 11	Literature 12 Literature 13 Rhetoric 7
HISTORY		History 1-3	a. History 3-4 b. Economics 1-2 c. Government 1-2	History 5-6 History 7 History 8 History 9 History 10 Greek 11- History 12	Economics 3 Economics 4 Economics 5 Economics 6 Government 3 Government 4 Government 5 Government 6 Government 7
PHILOSOPHY			a. Philosophy 1-2 b. Religion 1-2 c. Chemistry 1- Biology 2 (Biol. 3-4)	Philosophy 3 Philosophy 4 Philosophy 5 Philosophy 6	Philosophy 7 Philosophy 8 Religion 3-4 Religion 5
SPECIAL SUBJECTS NOT PARTS OF MAJOR GROUPS	ART	History 1-2	Art 1-2	Art 3	Art 4
	ORATORY	Literature 1-Rhetoric 4	Oratory 1-2		
MATHEMATICS	Mathematics 1-2	Mathematics 3-4	a. Mathematics 5-6 b. Mathematics 7-8 c. Physics 1-2	Mathematics 9 Mathematics 10 Physics 3-4	Physics 5-6 Physics 7 Physics 8
PHYSICS	Physics 1-2		a. Physics 3-4 b. Mathematics 3-4 c. Chemistry 1-2	Physics 5-6 Physics 7 Physics 8 Mathematics 5-6	Mathematics 7-8 Chemistry 3-4 Chemistry 5 Chemistry 6
CHEMISTRY	Chemistry 1-Chemistry 2		a. Chemistry 3-4 b. Physics 1-2 c. Geology 1-2	Chemistry 5 Chemistry 6 Physics 3-4	Geology 3 Geology 4
BIOLOGY	Chemistry 1-Biology 2		a. Biology 3-4 b. Biology 5-6 c. Geology 1-2	Biology 7-8 Physiology 1 Physiology 2	Geology 3 Geology 4
SPECIAL SUBJECT NOT PART OF MAJOR GROUPS	ASTRONOMY	Physics 1-2	Astronomy 1-2	Astronomy 3	Astronomy 4

EXHIBIT OF FRESHMAN STUDIES

The following exhibit of studies indicates the courses of instruction that are offered to Freshmen. The studies of the Freshman year are prescribed, except that there is an option between French and German for students in Admission Group I.

The amounts of French and German which students entering by the various admission groups must have completed before graduation are as follows: Admission Group I, French 1-2 or German 1-2; Admission Group II, French 1-2, 3-4, and 5-6 and German 1-2; Admission Group III, French 1-2 and German 1-2, 3-4, and 5-6; Admission Group IV, French 1-2 and 3-4 and German 1-2; Admission Group V, French 1-2 and German 1-2 and German 3-4.

The admission groups are arranged according to the different terms of admission stated on pp. 29, 30. The unenclosed figures refer to the courses of instruction as announced by the departments in the catalogue and the figures in parenthesis indicate the number of exercises per week in each course.

FRESHMAN YEAR—Required Courses

ADMISSION GROUP I	ADMISSION GROUP II	ADMISSION GROUP III	ADMISSION GROUP IV	ADMISSION GROUP V
English 1-2 (2)	English 1-2 (2)	English 1-2 (2)	English 1-2 (2)	English 1-2 (2)
French 1-2 or (4)	French 5-6 (4)	French 1-2 (3)	French 3-4 (3)	French 1-2 (3)
German 1-2 (3)	German 1-2 (3)	German 5-6 (4)	German 1-2 (3)	German 3-4 (3)
Greek 1-2 (4)	Latin 1-2 (3)	Latin 1-2 (3)	Latin 1-2 (3)	Latin 1-2 (3)
Latin 1-2 (3)	Mathematics 1-2 (4)	Mathematics 1-2 (4)	Mathematics 3-4 (4)	Mathematics 3-4 (4)
Mathematics 1-2 (4)	—	—	—	—
16	16	16	15	15
Hygiene and Phys- ical Training Public Speaking	Hygiene and Phys- ical Training Public Speaking	Hygiene and Phys- ical Training Public Speaking	Hygiene and Phys- ical Training Public Speaking	Hygiene and Phys- ical Training Public Speaking

GROUPS OF HOURS

ARRANGED ACCORDING TO TIME:

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
8:00	g	D,d	D,d	A,a	g	A,a
9:00	h	E,e	E,e	B,b	h	B,b
10:00	i	F,f	F,f	C,c	i	C,c
11:00	j	k	j	k	j	k
1:00	A,a	A	g	D	D,d	
2:00	B,b	B	h	E	E,e	
3:00	C,c	C	i	F	F,f	

ARRANGED ACCORDING TO LETTERS:

Group A	M. Tu. 1:00-2:00, Th. S. 8:00-9:00	Group d	Tu. W. 8:00-9:00, F. 1:00-2:00
Group B	M. Tu. 2:00-3:00, Th. S. 9:00-10:00	Group e	Tu. W. 9:00-10:00, F. 2:00-3:00
Group C	M. Tu. 3:00-4:00, Th. S. 10:00-11:00	Group f	Tu. W. 10:00-11:00, F. 3:00-4:00
Group D	Tu. W. 8:00-9:00, Th. F. 1:00-2:00	Group g	M. F. 8:00-9:00, W. 1:00-2:00
Group E	Tu. W. 9:00-10:00, Th. F. 2:00-3:00	Group h	M. F. 9:00-10:00, W. 2:00-3:00
Group F	Tu. W. 10:00-11:00, Th. F. 3:00-4:00	Group i	M. F. 10:00-11:00, W. 3:00-4:00
Group a	M. 1:00-2:00, Th. S. 8:00-9:00	Group j	M. W. F. 11:00-12:00
Group b	M. 2:00-3:00, Th. S. 9:00-10:00	Group k	Tu. Th. S. 11:00-12:00
Group c	M. 3:00-4:00, Th. S. 10:00-11:00		

The groups of no two small letters conflict, and the groups of no two large letters conflict.

Group a conflicts with group A, group b conflicts with group B, etc.

NOTE:—Between the Thanksgiving recess and the Easter recess, the exercises will be held regularly one-half hour later than the above schedule indicates.

COURSES OF INSTRUCTION

LANGUAGES

ENGLISH

Professor MAXCY, Professor PERRY, Assistant Professor REES,
Assistant Professor ALLEN, and Dr. DUTTON.

RHETORIC

*RHETORIC 1-2. *Rhetoric and Composition*. The work of the year is devoted mainly to the essentials of Good Use. The text-book is supplemented by theme-writing on assigned topics, and all written exercises receive extended criticism. A considerable amount of outside reading is also required as the basis of written work in class.

Freshman required course.

Two hours a week through the year.

Professor MAXCY, Assistant Professor ALLEN, and
Dr. DUTTON.

RHETORIC 4. *Narrative Composition*. This course is devoted to narrative writing. The elements of narration are discussed in turn: setting, character, plot, and the various forms of narrative composition, paragraph items, the short story, biography, history, etc. In connection with these topics the class studies a number of literary masterpieces. During the past year Prescott's *Conquest of Mexico*, the *Biography of Alice Freeman Palmer*, Hardy's *The Return of the Native*, and about fifty specimens of the short story were among the selections assigned. The class is also required to present original exercises in narrative composition: at least one short story of the length usually found in magazines, and many briefer exercises such as character sketches, biographic summaries, studies in setting, character, etc.

Four hours a week during the second semester.

* For convenience, the first semester of *Rhetoric 1-2* may be called *Rhetoric 1*, the second semester, *Rhetoric 2*, etc. But, in all such cases, the work of the two semesters together constitutes an integral, indivisible year-course.

Rhetoric 4 constitutes the second half of the Sophomore year course, *Literature 1-Rhetoric 4*. See *Literature 1*.

Professor MAXCY, Assistant Professor ALLEN, and
Dr. DUTTON.

RHETORIC 5-6. *Argumentation*. This course is devoted to the study of argumentative composition; its purpose is to train the student in logical and systematic methods of thought.

The main divisions of the course are: (a) correct phrasing of propositions suitable for discussion; (b) the analysis of propositions; (c) the study of evidence; (d) inductive and deductive methods; (e) generalization and analysis; (f) causal relations; (g) fallacies; (h) methods of refutation; (i) construction of briefs; (j) rhetorical qualities of the forensic; (k) persuasion.

In connection with the study of argumentative theory, each student is trained in the practice of argumentative composition by the writing of briefs, forensics, and various argumentative themes and exercises. As in *Rhetoric 1-2*, the work of each student is subjected to extended criticism.

The text-book is Foster's *Argumentation and Debating*, and this is supplemented by various texts of argumentative masterpieces.

Junior elective course; prerequisite, *Literature 1-Rhetoric 4*.

Three hours a week through the year.

Professor MAXCY.

[**RHETORIC 7. *Criticism*.** This course is devoted to the study of critical composition. It includes in general the matter discussed in Saintsbury's *History of Criticism*. The discussions are supplemented by extensive readings in the literature of criticism and by essays on critical topics chosen in connection with the readings.

Senior elective course; prerequisite, *Literature 3-4*, *Literature 5-6*, or *Rhetoric 5-6*.

Three hours a week during the first semester.

Omitted 1912-1913. Assistant Professor ALLEN.]

LITERATURE

LITERATURE 1-RHETORIC 4. *Literature 1* and *Rhetoric 4* constitute a Sophomore year course. See *Rhetoric 4*.

Literature 1. General English Literature. This course is two-fold, embracing not only an historical survey of English literature

from the earliest times to the end of the nineteenth century, but also a considerable amount of outside reading, so arranged as to accompany the text-book and lectures. Frequent examinations are held. A thesis on some subject chosen by the student in consultation with the instructor is required. The work is arranged with a view to laying a broad foundation for the more advanced courses in English literature.

Four hours a week during the first semester.

Assistant Professor REES and Dr. DUTTON.

LITERATURE 5-6. *Eighteenth Century English Literature and Nineteenth Century English Prose.*

Literature 5. Eighteenth Century English Literature. Lectures are given on the history and interpretation of the literature of the period. Extensive reading, with a view to first-hand knowledge of the thought and temper of the chief authors, is required.

The first semester.

Assistant Professor REES.

Literature 6. English Prose Writers of the Nineteenth Century. A course in which the principal prose writers of the period are studied. Lectures are given and a large amount of outside reading is assigned. Among the authors studied are Scott, DeQuincy, Macaulay, Hazlitt, Carlyle, Thackeray, Matthew Arnold, Newman, Pater, Ruskin, George Meredith, Stevenson and Kipling. Saintsbury's *History of English Literature* (nineteenth century) is used as a text-book.

The second semester.

Professor PERRY.

Junior elective course; prerequisite, *Literature 1-Rhetoric 4*.

Three hours a week through the year.

[**LITERATURE 7. *American Literature.*** A study of American literature, both prose and poetry. The first part of the course consists of lectures on the early colonial writers. Wendell and Greenough's *American Literature* is used as a text-book and a considerable amount of outside reading is required.

Senior elective course; prerequisite, *Literature 3-4* or *Literature 5-6*.

Three hours a week during the first semester.

Omitted 1912-1913.

Professor PERRY.]

LITERATURE 8. *Nineteenth Century English Poetry*. This course consists of lectures, biographical and critical, together with assigned readings. It includes a study of Wordsworth, Coleridge, Byron, Shelley, Keats, Browning, Tennyson, and other poets of the period.

Senior elective course; prerequisite, *Literature* 3-4 or *Literature* 5-6.

Three hours a week during the second semester.

Assistant Professor REES.

LITERATURE 9-10. *Old English and Middle English*.

Literature 9. *Old English*. This course includes both an historical survey of the literature from the seventh century to Chaucer and an elementary study of Old English. Selections from representative works are read in the original. Considerable attention is devoted to the linguistic principles involved in the development of English. Smith's *Old English Grammar* and Bright's *Anglo-Saxon Reader* are used as texts.

The first semester.

Literature 10. *Middle English*. This course includes careful reading of all of Chaucer's important work, particularly the *Canterbury Tales* and *Troilus and Criseyde*, and of selections from Gower, Langland, and the Metrical Romances. Attention is paid to the social and political conditions of the fourteenth century.

The second semester.

Senior elective course; prerequisite, *German* 3-4 and either **Literature* 3-4 or **Literature* 5-6.

Three hours a week through the year.

Assistant Professor REES.

LITERATURE 11. *The English Drama from 1642 to the present time*. Preliminary lectures are given upon the structure of the drama. The course includes the reading of representative plays from Congreve to Jones and Pinero.

Senior elective course; prerequisite, *Literature* 3-4 or *Literature* 5-6.

Three hours a week during the first semester.

Professor PERRY.

LITERATURE 12. *The English Bible*. In this course the King James version is read carefully and examinations are held on the

* Omitted for students majoring in German.

assignments. Lectures are given on the history, the literary quality, and the influence of the Bible. A study is made of seventeenth century authors affected by the biblical literature, such as Milton, Herbert, and Dryden.

Senior elective course; prerequisite, *Literature* 3-4 or *Literature* 5-6.

Three hours a week during the second semester.

Assistant Professor REES.

LITERATURE 13. *The English Novel*. This course includes a consideration of the history and development of the English novel from the eighteenth century to the present day. The course is based largely on lectures and is attended by extensive readings in the authors under discussion. The ground covered is, in general, that of Cross's *Development of the English Novel*.

Senior elective course; prerequisite, *Literature* 3-4 or *Literature* 5-6.

Three hours a week during the first semester.

Professor MAXCV.

PUBLIC SPEAKING AND ORATORY

PUBLIC SPEAKING. This course aims (1) to emphasize some of the fundamental principles of oral expression and (2) to apply them to the delivery of the individual. The class is divided into small sections and extended drill is given each man. The choice of speakers for the prize contest in declamation is based on the work of the members of the class in reading and speaking.

Freshman required course.

Professor PERRY.

[ORATORY 1-2. This course is intended to develop the delivery of the students. It includes (1) the practice of exercises for the development of the voice and body as expressive agents, and (2) practice in different forms of public speaking. The latter includes the rendering of original selections from memory, speaking from notes or outline, and impromptu speaking.

It will offer advanced work in both technique and delivery. The structure and style of the oration considered—also its different forms. Each student writes at least three manuscripts of not less than eight hundred words each. Text-books are used.

Junior elective course, limited to thirty men; prerequisite, *Literature* 1-Rhetoric 4.

Three hours a week through the year.

Omitted 1912-1913.]

During 1912-1913 extended drill will be given in all cases to speakers who compete in prize contests, and to those who are to appear on the Commencement platform.

Professor PERRY.

GERMAN

Professor WAHL, Assistant Professor JOHNSON, Mr. HEWITT,
Mr. HILDRETH, and Mr. BANGS.

GERMAN 1-2. *Elementary German.* This is a course in grammar, composition, and the reading of narrative prose and some lyrics, also memorizing of poetry. Oral use of the language is introduced gradually, and special attention is paid to pronunciation in the small sections into which the class is divided.

The course is optional with *French* 1-2 for Freshmen in Admission Group I who enter without a modern language, is required of students in Admission Groups II and IV who do not offer *German a* for entrance, and is elective for all others.

Three hours a week through the year.

Assistant Professor JOHNSON, Mr. HEWITT, Mr. HILDRETH,
and Mr. BANGS.

GERMAN 3-4. *Intermediate German.* This course is intended to give the student a fair reading knowledge of the language. Short stories by Baumbach, Ebner-Eschenbach, and Meyer, a drama by Sudermann, and Heine's *Reisebilder*, also selections from his poems, are read for this purpose. Thomas's Grammar is used for extending grammatical knowledge, and the work in composition is continued.

This course is required of Freshmen in Admission Group V, and is elective for all others; prerequisite, *German* 1-2 or admission *German a*.

Three hours a week through the year.

Assistant Professor JOHNSON, Mr. HEWITT, Mr. HILDRETH,
and Mr. BANGS.

GERMAN 5-6. *Advanced German.* This course is devoted to the reading and interpretation of *Schiller* and *Lessing*. It is conducted as far as practicable in German and includes composition, dictation, and lectures.

Prerequisite, *German 3-4* or admission *German b*; students admitted with *German bc* take *German 6* only.

Four hours a week through the year.

Professor WAHL, Mr. HEWITT, Mr. HILDRETH, and Mr. BANGS.

GERMAN 7-8. *Nineteenth Century Literature*. In this course representative dramas and novels of the nineteenth century are read and discussed. It deals with a study of the various literary movements of the period and with such authors as Hoffmann, Kleist, Koerner, Grillparzer, Hauff, Hebbel, Ludwig, Keller, Wildenbruch, Hauptmann, and Fontane. It is conducted almost entirely in German and includes also composition, collateral reading, and lectures.

Prerequisite, *German 5-6*.

Four hours a week through the year.

Assistant Professor JOHNSON.

GERMAN 9-10. *Goethe*. This course is devoted to the reading of Goethe's *Faust* (Parts I and II) and other works of the poet, together with a study of his life and times. It is conducted in German, including lectures in German.

Prerequisite, *German 7-8*.

Three hours a week through the year.

Professor WAHL.

GERMAN 11-12. *Luther to Classic Period*. The study of German civilization and culture during the first centuries of modern German history is pursued in this course by reading selections from the literature of this time, also some of Freytag's historical novels and essays as well as other literature illustrative of German life during this epoch. The course is conducted in German and includes lectures in German.

Prerequisite, *German 9-10*.

Three hours a week through the year.

Professor WAHL.

GERMAN 13-14. *Specialized Reading*. This course is intended to help students in reading selections from authoritative German sources dealing with subjects in which they desire to specialize. If unity of subjects cannot be maintained, individual assignments for outside reading will be made and the reading be supervised by means of abstracts written in German or appointments for con-

ferences. The course will be conducted in German, will include lectures in German, and may serve as preparation for graduate work.

Prerequisite, *German* 9-10.

Three hours a week through the year.

Professor WAHL.

GREEK

Assistant Professor DICKERMAN, Assistant Professor GALBRAITH, Mr. DAME, and Dr. WAGENER.

GREEK 1-2. Selections from *Herodotus*. Attention is given to a review of Greek forms and syntax, with reference to Goodwin's *Greek Grammar*.

Lysias. Special attention is given to the political and social allusions which abound in the orations of Lysias.

Homer. Books V, VI, VII, and VIII of the *Odyssey*. Some of the principal Homeric questions are discussed. The instructor gives to the class several readings from portions of the poem not prescribed for the daily work.

Required course for Freshmen in Admission Group I.

Four hours a week through the year.

Assistant Professor DICKERMAN and Dr. WAGENER.

GREEK 3-4. *Plato, Xenophon, Greek Testament, and Greek Drama*.

Greek 3. Plato and Xenophon. Plato's *Apology* and *Crito* and selections from Xenophon's *Memorabilia* are read by the class. There is some discussion of the earlier Greek philosophy and of the philosophy of Plato.

New Testament Greek. The gospel of *Mark* and parts of the other gospels.

The first semester.

Assistant Professor DICKERMAN.

Greek 4. Greek Drama. Aristophanes, Sophocles, and Euripides.

The first part of the work in the drama is devoted to Greek comedy and the reading of the *Clouds* of Aristophanes, together with selections from the *Birds* and the *Frogs*. Later the *Medea* and the *Cyclops* of Euripides and the *Antigone* of Sophocles are read by the class, chiefly from the literary point of view. Atten-

tion is given to the influence of the Greek drama on later literature and to comparisons with the modern stage.

The second semester.

Assistant Professor GALBRAITH.

Sophomore elective course; prerequisite, *Greek 1-2*.

Four hours a week through the year.

GREEK 5-6. *Demosthenes, Homer, and Lyric Poetry.*

Greek 5. Demosthenes. It is planned to read the following orations of Demosthenes:—*Philippics*, I, II, III, *On the Peace*, *On the Chersonese*, and as much of the oration *On the Crown* as circumstances permit. The literary and historical aspects of the orations are studied with some care.

The first semester.

Assistant Professor GALBRAITH.

Greek 6. Homer and the Lyric Poets. Considerable portions of the *Iliad* are read, the aim being to gain an acquaintance with the poem as a whole. The development of Greek poetry up to the fifth century is traced in a study of the more important *lyric fragments*.

The second semester.

Assistant Professor DICKERMAN.

Junior elective course; prerequisite, *Greek 3-4*.

Three hours a week through the year.

GREEK 7. *Thucydides and Plato.* The account of the Sicilian expedition in Books VI and VII of Thucydides is read, together with some other portions of his history. Some of the minor dialogues of Plato are read.

Senior elective course; prerequisite, *Greek 5-6*.

Three hours a week during the first semester.

Mr. DAME.

GREEK 8. *Aeschylus and Sophocles.* The *Prometheus* of Aeschylus and the *Oedipus Rex* of Sophocles are read in class. The reading of an additional play is required of each student.

Theocritus. The course ends with the reading of the best of the *Idyls* of Theocritus.

Senior elective course; prerequisite, *Greek 5-6*.

Three hours a week during the second semester.

Assistant Professor GALBRAITH.

GREEK 9. *Greek Literature*. Some of the masterpieces of Greek literature are read, in translation, both in the classroom and as assigned reading. The instructor gives a brief account of the lives of the authors whose works are read, and traces the origin and development of the various forms of literature. No knowledge of Greek is required.

Senior elective course; prerequisite, *Greek 3-4* or *Latin 5-6*.

Three hours a week during the first semester.

Assistant Professor GALBRAITH.

GREEK 10. *Life of the Ancient Greeks*. Described and illustrated by the aid of literature and of the monuments. Informal lectures are given by the instructor, while members of the course report regularly the results of reading and investigation assigned to them. No knowledge of Greek is required.

Senior elective course; prerequisite, *Greek 3-4* or *Latin 5-6*.

Three hours a week during the second semester.

Mr. DAME.

GREEK 11-HISTORY 12. *Greek 11* and *History 12* constitute a Senior year course. See *History 12*.

Greek 11. Greek History. The social, political, and military history of the Greek world, from the origins of the cities to the Roman conquest; Greek democracies, especially at Athens, Syracuse, and Tarentum, of Alexander, and of the Hellenistic kingdoms; the federal unions; and the republic of Rhodes. Attention is given to the social and political theory of the Greeks.

Reading, lectures, quizzes, and written work.

The required reading in this course is in English only, but consultation of the Greek sources is encouraged.

Special instruction is offered, if desired, to prospective teachers, or to any students wishing to attempt some original investigation, but the course aims primarily to trace for the general student the progress of Hellenic civilization, with emphasis upon its abiding influences on later times.

Senior elective course; prerequisite, *History 3-4*; or *Greek 3-4* or *Latin 3-4* for students majoring in Greek or Latin.

Three hours a week during the first semester.

Assistant Professor DICKERMAN.

LATIN

Professor WILD, Associate Professor WETMORE, Assistant Professor GALBRAITH, Mr. DAME, and Dr. WAGENER.

LATIN 1-2. *Livy.* Book XXI and portions of Book XXII of *Livy* are read. The principles of Latin syntax are studied with the aim of connecting the first weeks of college instruction as closely as possible with that received in the preparatory schools. There is frequent practice in reading at sight. The history of Rome during the Punic Wars, including assignments for collateral reading, is an important part of the course.

Selections from Latin Poets. Cicero. The work of the second semester includes selections from the Latin Poets, and the *De Senectute* of Cicero, with sight reading from the *De Amicitia*.

Mackail's *Latin Literature* is used throughout the year.

Freshman required course.

Three hours a week through the year.

Professor WILD, Associate Professor WETMORE, Assistant Professor GALBRAITH, Mr. DAME, and Dr. WAGENER.

LATIN 3-4. *Latin Comedy, Private Life of the Romans, Tacitus, and Horace.*

Latin 3. Latin Comedy. The primary aim in this part of the course is to trace the development of Latin Comedy, and to study its spirit as shown in the plays of Plautus and Terence. The *Captivi* and the *Trinummus* of Plautus, and the *Adelphoe* and the *Heautontimoroumenos* of Terence are read carefully, and other plays are read, either at sight or as translated by the instructor, e. g. the *Menaechmi* of Plautus, and the *Phormio* of Terence.

Private Life of the Romans. One exercise a week is devoted to the study of Roman life and customs, with illustrations by means of lantern slides and other material.

The first semester.

Professor WILD.

Latin 4. Tacitus and Horace. The reading work of the second semester is divided between the works of Tacitus and the *Odes* of Horace.

The reading in Tacitus includes the *Agricola*, the first twenty-seven chapters of the *Germania*, and selections from the *Annals*. There is collateral reading in the history of the Empire. If possible, several of Horace's *Satires* are read during this part of the course.

In connection with the *Odes* of Horace some attention is paid to the English lyric, involving the preparation of careful translations from the Latin and a comparison of the better known English versions. The student is required to commit to memory some of the famous passages.

The second semester.

Assistant Professor GALBRAITH.

Sophomore elective course; prerequisite, *Latin 1-2*.

Four hours a week through the year.

LATIN 5-6. *Vergil, Catullus, and Rapid Reading.*

Latin 5. Vergil. The object of this part of the course is to give the student a thorough knowledge and a high appreciation of the works of Vergil. To this end the *Eclogues* and the first six books of the *Aeneid* are rapidly reviewed, while a series of lectures is being given on the life and times of Vergil, his motives, sources, art, and influence on the later literature, as well as on his so-called minor poems included in the *Appendix Vergiliana* and on the mediæval conception of Vergil.

About two-thirds of the semester is devoted to reading the *Georgics* and the last six books of the *Aeneid*. The technical parts of the *Georgics* are entirely omitted, only the poetical episodes being read. The last six books of the *Aeneid* are read, partly by the entire class in regular assignments, and partly by individual assignments and reading at sight.

Early in the course a large number of topics for original investigation and criticism in connection with the student's daily reading are suggested. Every man is expected to select one of these topics and prepare a paper to be read before the class.

There is considerable reading at sight, chiefly in prose authors.

The first semester.

Associate Professor WETMORE.

Latin 6. Catullus and Rapid Reading of Prose Authors. The greater part of Catullus is read. Passages from any source tending to throw light on the interpretation of the poet are read at sight.

About half of the work consists of the rapid reading of prose authors, including Sallust, Pliny the Younger, and Suetonius. The aim is to cultivate an appreciation of Latin literature and facility in grasping the thought immediately through the language.

The second semester.

Professor WILD and Associate Professor WETMORE.

Junior elective course; prerequisite, *Latin 3-4*.

Three hours a week through the year.

LATIN 7. *Roman Satire.* In this course the *Satura* as a distinctively Roman product is treated in such a way as to show its rise and development. The *Satires* of Horace and Juvenal comprise the main subjects for reading. The parts played in the history of Roman Satire by Ennius, Lucilius, and Varro are illustrated by the fragments of their works. Many of the *Epigrams* of Martial are read at sight.

Senior elective course; prerequisite, *Latin 5-6*.

Three hours a week during the first semester.

Associate Professor WETMORE.

LATIN 8. *A Brief Survey of Latin Literature.* It is the aim of this course to give a general survey of Latin literature from the earliest period down to the third or fourth century A. D. The plan involves (1) a reading of selected portions of the most important authors, especially those not included in the other courses, and (2) informal lectures upon the rise and development of the various forms of literature, with such notice of the authors and their works as shall help to assign them their place in literature.

Senior elective course; prerequisite, *Latin 5-6*.

Three hours a week during the second semester.

Professor WILD.

LATIN COMPOSITION. To those who intend to become teachers of Latin there is open in connection with *Latin 7* and *Latin 8* an additional course of one hour a week in advanced Latin composition.

Professor WILD.

For *Roman History*, see *History 12*.

ROMANCE LANGUAGES

Professor TAYLOR, Mr. A. L. CRU, Dr. BARTON, Mr. J. N. CRU,
and Mr. McMASTER.

FRENCH

FRENCH 1-2. *Elementary French.* This course includes the study of grammar and composition and the reading of modern French. The class is arranged in small divisions so that each student may receive individual attention and adequate training in pronunciation and the use of conversational French. Special attention is given to dictation.

Optional with *German 1-2* for Freshmen in Admission Group I who enter without a modern language. Required of students in Admission Groups III and V who do not offer *French a* for admission.

Three hours a week through the year.

Professor TAYLOR, Dr. BARTON, Mr. J. N. CRU, and
Mr. McMASTER.

FRENCH 3-4. *Intermediate French.* This course continues all the work of *French 1-2*. Standard authors are read and the use of the spoken language is increased.

Prerequisite, *French 1-2* or admission *French a*.

Three hours a week through the year.

Dr. BARTON, Mr. J. N. CRU, and Mr. McMASTER.

FRENCH 5-6. *Advanced French.* This course is devoted to the study of the Romantic movement in France and includes reading, composition, and oral practice. Lectures will be given on the history of romanticism.

This course is open to those who have completed *French 3-4* and is required of Freshmen entering in Admission Group II.

Prerequisite, *French 3-4* or admission *French b*.

Four hours a week through the year.

Professor TAYLOR, Mr. A. CRU, and Mr. J. N. CRU.

FRENCH 7-8. *Poetry and Drama* of the second half of the nineteenth century. The course includes reading, lectures, composition, and oral practice.

This course is conducted entirely in French. Prerequisite, *French 5-6*.

Four hours a week through the year.

Mr. A. CRU.

FRENCH 9-10. *The French Novel* since the Romantic movement. Lectures in French upon the various schools. The course is conducted entirely in French. Outside reading is assigned.

Prerequisite, *French 7-8*.

Three hours a week through the year. Further conference hours may be arranged with the class.

Mr. J. N. CRU.

[**FRENCH 11-12. *Classic French Literature*** of the age of Louis XIV. The course begins with the Renaissance and shows the development of classicism. Lectures in French upon the period.

The course is a study of the culture of the age of Louis XIV and the social conditions as expressed in its literature, and is conducted entirely in French. Outside reading is assigned.

Prerequisite, *French 9-10*.

Three hours a week through the year. Further conference hours may be arranged with the class.

Omitted 1912-1913.

1

SPANISH

SPANISH 1-2. *Elementary grammar and reading* of classical and modern Spanish. This course includes a practical training in Spanish grammar and composition, and the reading of standard works of literature.

Senior elective course; prerequisite, *French 5-6* or *Italian 1-2*.

Three hours a week through the year.

Dr. BARTON.

ITALIAN

ITALIAN 1-2. *Elementary grammar and reading* of classical and modern Italian. This course includes a practical training in Italian grammar and composition, and the reading of standard works of literature.

Junior elective course; prerequisite, *French 3-4*.

Three hours a week through the year.

Mr. McMASTER.

[ITALIAN 3-4. *Dante*. This course is devoted to a study of the *Divina Commedia* both as a masterpiece of literature and as an exponent of the social, philosophical, and religious ideas of the middle ages.

Senior elective course; prerequisite, *Italian 1-2*.

Three hours a week through the year.

Omitted 1912-1913.

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PHILOSOPHY

ECONOMICS

Professor DROPPERS and Mr. WRIGHT.

ECONOMICS 1-2. *Introductory Economics.* This course is a study of the leading principles of economic science with some applications to modern industrial conditions. Study of a text-book and of assigned collateral reading is the basis of the work. Discussion of this matter in class is supplemented by occasional lectures and by written tests.

Junior elective course.

Three hours a week through the year.

Professor DROPPERS and Mr. WRIGHT.

ECONOMICS 3. *Economic History.* A study of the gradual development of the modern industrial world from the middle of the 18th to the end of the 19th century. It comprises the great inventions in textile and iron industries, the applications of steam, railways, steamships, cotton culture, the factory system, banking, and the rise of the modern industrial nations.

Assignments of reading on special topics.

Senior elective course; prerequisite, *Economics 1-2, Government 1-2, or History 3-4.*

Three hours a week during the first semester.

Professor DROPPERS.

ECONOMICS 4. *Corporations.* A study of modern combinations of industry. Historical development of modern industrials in the United States from the pool to the trust and holding company. Forms of corporation securities. Economic and social effects of great combinations. Legislation in the United States and other countries and important legal decisions. State and federal control.

Senior elective course; prerequisite, *Economics 1-2.*

Three hours a week during the second semester.

Professor DROPPERS and Mr. WRIGHT.

ECONOMICS 5. *Money and Banking.* A survey of the principles of money, especially in their relation to banking systems. Dunbar's *History and Theory of Banking* and White's *Money and Banking* are used.

Senior elective course; prerequisite, *Economics* 1-2.

Three hours a week during the first semester.

Professor DROPPERS and Mr. WRIGHT.

ECONOMICS 6. *Public Finance.* A study of the theories and methods of taxation and financial administration. Bullock's *Selected Readings in Public Finance* is used as a text-book.

Senior elective course; prerequisite, *Economics* 1-2.

Three hours a week during the second semester.

Professor DROPPERS and Mr. WRIGHT.

GOVERNMENT AND POLITICAL SCIENCE

President GARFIELD, Professor SMITH, and Assistant Professor DOUGHTY.

GOVERNMENT 1-2. *The Constitution and Government of the United States.* This course comprises a study of the United States constitution both in its principles and structure and in its actual operation. The first semester, *Government 1*, consists of an examination of the theories and principles of government upon which is based the constitution, as those theories and principles are presented in *The Federalist*, which work is used as a text-book in this course. The second semester, *Government 2*, is an elementary course in Constitutional Law based upon Hall's *Constitutional Law* as a text in connection with McClain's *Cases in Constitutional Law*. The methods of instruction consist of lectures and oral and written recitations.

Junior elective course; prerequisite, *History* 1-2.

Three hours a week through the year.

Assistant Professor DOUGHTY.

GOVERNMENT 3. *Municipal Government.* A study of the structure, working, and problems of municipal government in the United States, England, Germany, and France. Goodnow's *City Government in the United States* and Munro's *Government of European Cities* will be read. References to Beard's *Digest of Short Ballot Charters*.

Senior elective course; prerequisite, *Government* 1-2.

Three hours a week during the first semester.

President GARFIELD.

[GOVERNMENT 4. *Comparative Government and Politics*. A study of the practical working of the governments of the United States, England, and the European countries.

Senior elective course; prerequisite, *Government* 1-2.

Three hours a week during the second semester.

Omitted 1912-1913.

Professor SMITH.]

GOVERNMENT 5. *History of the Common Law of England* (a).

This course is a study in outline of the Common Law as a system: its sources, subject matter, and principles. The work consists of recitations, oral and written, and lectures. Kerr's edition of *Blackstone* is used as a text-book.

Senior elective course; prerequisite, *Government* 1-2.

Three hours a week during the first semester.

Assistant Professor DOUGHTY.

GOVERNMENT 6. *History of the Common Law of England* (b).

This course consists of a study of the processes of reasoning involved in the application of the general principles of the system, and the rules of any particular branch, to specific sets of facts. The work consists of lectures, classroom discussions, and written exercises. There are assignments of reading on special topics.

Senior elective course; prerequisite, *Government* 5.

Three hours a week during the second semester.

Assistant Professor DOUGHTY.

GOVERNMENT 7. *Jurisprudence*. This course is a study of the theory and development of law, its sources, and subject matter. The work consists of oral and written recitations and lectures. Holland's *Elements of Jurisprudence* and Maine's *Ancient Law* are used as text-books.

Senior elective course; prerequisite, *Government* 1-2.

Three hours a week during the first semester.

Assistant Professor DOUGHTY.

HISTORY

Professor GOODRICH, Professor SMITH, and Mr. BUFFINTON.

HISTORY 1-2. *General European History* (375-1740). The work of the first semester covers the field of general European history from the Barbarian Invasions to the Renaissance. That of the second semester comprises the period from the Reformation to the eve of the French Revolution.

The methods comprise a text-book, lectures, collateral reading, and frequent written tests. Particular attention is given to the method of study and the use of materials by the student.

This course is the fundamental one in the department, being the prerequisite for all other courses in History, and also for those in Art and Government. Although open to members of the upper classes, it is intended primarily for Sophomores and it is desirable that it be taken in the Sophomore year.

Four hours a week through the year.

Professor GOODRICH and Mr. BUFFINTON.

HISTORY 3-4. *The History of the United States (1740-1865)*. This course deals with the formation of the United States, tracing in the first semester the course of the American Revolution, the creation of a federal government, and the establishment of an independent federal policy; and studying in the second semester the rise of Northern and Southern sectional antagonism, culminating in the Civil War and the triumph of the union. The methods comprise a text-book, lectures, parallel reading, reports on assigned topics, and written tests.

Junior elective course; prerequisite, *History 1-2*.

Three hours a week through the year.

Professor SMITH.

HISTORY 4a. *The Slavery Contest in the United States (1815-1865)*. This course is identical with the second semester of *History 3-4*. It is offered in 1912-1913 for those students only who have completed *History 3* in 1911-1912.

Senior elective course; prerequisite, *History 3-4* of 1911-1912.

Three hours a week during the first semester.

Professor SMITH.

HISTORY 5-6. *European History—Era of Revolution and Reconstruction (1740-1871)*. The work of the first semester begins with the accession of Frederick the Great (1740) and concludes with the fall of the Napoleonic Empire (1814). After a rapid survey of Europe in the age of Frederick, the main part of the semester is devoted to the study of the period of the French Revolution and the Napoleonic Empire. The course of the movement, its causes and results, are studied in relation to all the principal states of Europe.

The work of the second semester begins with the reconstruction of Europe after the fall of Napoleon. First the period of reaction and that of the national revolutions of 1848 are studied. Special attention is then given to the constructive movements in Italy, Austria-Hungary, and Germany, concluding with the Franco-German War and the founding of the German Empire.

Junior elective course; prerequisite, *History 1-2*.

Three hours a week through the year.

Professor GOODRICH.

HISTORY 7a. *The United States since the Civil War (1865-1908).* This course continues the history of the United States from the close of the Civil War to the election of 1908, covering the Reconstruction period, the reorganization of parties, the rise of the currency and tariff contests, the expansion episode, and the return to internal political questions.

Senior elective course; prerequisite in 1912-1913, *History 4a*; in 1913-1914, *History 3-4*.

Three hours a week during the second semester in 1912-1913; thereafter in the first semester.

Professor SMITH.

[**HISTORY 8.** *Recent European History (1871-1910).* This course is a continuation of *History 5-6* and is a study of the political development of all the European states from the Franco-German War to the present time. Special attention is given to the constitutional developments in France, Germany, Austria-Hungary, Russia, Turkey, and the Balkan states, concluding with a study of the colonial expansion and the international relations of European states down to the present time.

Senior elective course; prerequisite, *History 5-6*.

Three hours a week during the second semester.

Omitted 1912-1913.

Professor GOODRICH.]

HISTORY 9. *The English Colonization of North America (1497-1740).* The course is a study of the colonization by the English of the Northern American Colonies, special attention being paid to the origins of American institutions in England, the connection between English politics and American settlement and the development of separate American political life.

Senior elective course; prerequisite, *History 3-4*.

Three hours a week during the first semester.

Professor SMITH.

HISTORY 10. *Modern England and the British Colonial Empire* (1740-1910). This course comprises a survey of the rise of parliamentary government in England and the growth of the existing British colonial empire, from the reign of George II to the present day.

Senior elective course; prerequisite, *History 3-4* or *History 5-6*.

Three hours a week during the second semester.

Professor SMITH.

[**HISTORY 12. *Roman History during the Revolution and the Empire***. The economic, social, political, and military history of the Roman world from the age of the Gracchi to that of Theodosius. Reading, lectures, quizzes, and written work.

Consultation of the Latin sources is encouraged but not required.

Special instruction is offered, if desired, to prospective teachers, or to any students wishing to attempt some original investigation. But the course aims primarily, while not neglecting great personalities, to survey for the general student of history or of the classics the Roman foundations of European civilization.

Senior elective course; prerequisite, *Greek 11*.

Three hours a week during the second semester.

Greek 11 and *History 12* constitute a Senior year course. See *Greek 11*.

Omitted 1912-1913.

Assistant Professor CLARK.]

PHILOSOPHY

Professor RUSSELL and Assistant Professor PRATT.

PHILOSOPHY 1-2. *Elementary Psychology and Philosophy*. The first semester will be devoted to an introductory course in psychology, the aim of which will be to comprehend the essential facts of the mental life. Angell's *Psychology* will be used and there will be supplementary lectures upon the more important phenomena of abnormal psychology. In the second semester the chief problems of philosophy will be considered by means of short papers, discussions, and a text-book. The aim of the course will be to train the student in accurate thinking and to enable him to come to intelligent conclusions on the problems of philosophy for himself.

The first semester.

Professor RUSSELL.

The second semester.

Assistant Professor PRATT.

Junior elective course.

Three hours a week through the year.

PHILOSOPHY 3. *Ethics*. The attempt is made to discover the meaning and basis of duty by discussions, original papers, and reports.

Senior elective course; prerequisite, *Philosophy* 1-2.

Three hours a week during the first semester.

Assistant Professor PRATT.

PHILOSOPHY 4. *An Advanced Course in Ethics*. The aim of this course is to study the application of ethical principles and ideals to present-day problems in social and industrial organizations.

Senior elective course; prerequisite, *Philosophy* 3.

Three hours a week during the second semester.

Professor RUSSELL.

PHILOSOPHY 5. *Advanced Psychology*. The subject for this year is Social Psychology. After a study of McDougal's *Social Psychology*, various psychological aspects of society will be taken up in lectures and by reports from members of the class.

Senior elective course; prerequisite, *Philosophy* 1-2.

Three hours a week during the first semester.

Assistant Professor PRATT.

PHILOSOPHY 6. A course in the Philosophy of William James and of Henri Bergson. In this course the students read a large part of the writings of these philosophers in connection with the critical expositions which form the content of the lectures given.

Senior elective course; prerequisite, *Philosophy* 1-2.

Three hours a week during the second semester.

Professor RUSSELL.

PHILOSOPHY 7. A course in the History of Greek Philosophy. Windeband's *History of Ancient Philosophy* is made the basis of this course, and its use is supplemented by the reading of first-hand sources, papers upon special topics, and lectures.

Senior elective course; prerequisite, *Philosophy* 1-2.

Three hours a week during the first semester.

Professor RUSSELL.

PHILOSOPHY 8. *History of Modern Philosophy*. This course carries on into modern philosophy the historical study begun by the student in the preceding course. It is based on a text-book supplemented by assigned reading from the leading modern phi-

losophers, and lectures on the more difficult questions, with occasional papers and much informal discussion.

Senior elective course; prerequisite, *Philosophy* 1-2.

Three hours a week during the second semester.

Assistant Professor PRATT.

RELIGION

Professor MORTON and Assistant Professor PRATT.

RELIGION 1-2. *History and Philosophy of Religion.*

Religion 1. History of Religion. The more important ideas and institutions of the religion of primitive peoples are first considered, after which the religions of Egypt, India, Persia, Israel, and Islam are taken up in some detail. The instruction is by lectures with short quizzes, a considerable amount of required reading from the *Sacred Books*, and numerous reports on them. In addition to this, each student chooses some topic for independent investigation and writes a thesis of some length on it.

The first semester.

Assistant Professor PRATT.

Religion 2. Introduction to the Philosophy of Religion. Of the three subjects considered in the philosophy of religion,—Nature, Man, God,—this course deals with the first two. The main elements of religion are studied as facts of scientific knowledge, and as attempted solutions of the problems of existence. The philosophical movement of the Renaissance serves as an approach to the subject. Lectures and discussions.

The second semester.

Professor MORTON.

Junior elective course.

Three hours a week through the year.

RELIGION 3-4. *Medieval Religion and Philosophy.* Taylor's *Medieval Mind* is taken as the text-book, and Dante's works in English translation as illustrative material. The course includes a general survey of the philosophy of the Middle Ages. Lectures, discussions, and preparation of special topics by members of the class.

Senior elective course; prerequisite, *Religion* 1-2 or *Philosophy* 1-2.

Three hours a week through the year.

Professor MORTON.

RELIGION 5. *Philosophy of Religion. (Theism.)* The reasons are given for believing in a reality corresponding to the assumptions and aspirations of religion. Objections and anti-theistic theories are considered. With the help of the comparative study of religions, an attempt is made to distinguish the essentials of religious belief.

Text-books, lectures, and discussions. Special topics are assigned for more extended study.

Senior elective course; prerequisite, *Religion 1-2* or *Philosophy 1-2*.

Three hours a week during the first semester.

Professor MORTON.

SCIENCES

ASTRONOMY

Professor MILHAM.

ASTRONOMY 1-2. This year course is divided into two parts, descriptive astronomy and an introduction to spherical and practical astronomy. In the descriptive astronomy a text-book, Young's *Manual of Astronomy*, is used as the basis of instruction. Numerous supplementary lectures are given and the course is illustrated by charts and photographs. Such topics as the time service of the country, the origin of our calendar, the presence of an atmosphere in the case of the moon and the planets, and the cosmogony, are treated at length. During the second part of the course lectures on modern observatories, their location, equipment, and work, are given. Experimental demonstration and practical exercises in the observatory constitute a large part of the instruction during the last part of the second semester.

Junior elective course; prerequisite, *Physics* 1-2.

Three hours a week through the year.

ASTRONOMY 3. *Theoretical Astronomy*. The mathematical side of astronomy is here considered. Elliptic motion, place in orbit, place in space, and the computation of orbits are treated.

Senior elective course; prerequisite, *Astronomy* 1-2 and *Mathematics* 5-6.

Three hours a week during the first semester.

ASTRONOMY 4. *Spherical and Practical Astronomy*. This course consists of spherical trigonometry and its application to astronomy and the use of astronomical instruments in the determination of latitude, longitude, and time.

Senior elective course; prerequisite, *Astronomy* 1-2 and *Mathematics* 3-4.

Three hours a week during the second semester.

BIOLOGY

Professor CLARKE and Professor KELLOGG.

BIOLOGY 2. *A study of living matter and of life*.

Text-book, lectures, oral and written recitations, laboratory exercises.

Sophomore elective course; prerequisite, *Chemistry 1*.

Four hours a week during the second semester.

Fee, \$2.00.

Professor CLARKE.

Biology 2 is to be taken only as the second semester of the Sophomore year-course, *Chemistry 1-Biology 2*. See *Chemistry 1*.

BIOLOGY 3-4. The year's work includes two subjects:

(a) *Zoölogy of the Invertebrata*. This part of the course extends from September to about the last of March. Instruction is by means of lectures, recitations, and laboratory work. The structure and functions of several single-celled organisms are studied in the laboratory by means of the microscope. Among the many-celled forms examined are sponges, fresh-water hydras, marine hydroids, the star-fish, sea-urchins, worms, crayfish, grasshopper, fresh-water and marine bivalves, and the squid. The object of this work is chiefly to demonstrate the meanings of homologies and adaptations, and to afford an appreciation of the value of the data employed in inductions considered later in the course. Laboratory work is recorded by each student in simple outline drawings.

(b) *Theories of Biology*. The remainder of the year is given to a series of lectures, with recitations, on the general problems of biology. Laboratory work in (a) is continued during this period.

The course considers the views of the early Transmutationists, of Lamarck, Erasmus Darwin, and others, and enters fully into a discussion of the theory of natural selection of Darwin and Wallace. Attention is given to early criticisms of the theory, and more particularly to recent observations that tend to limit it as a universal explanation of the structural and functional peculiarities of organisms.

Among the subjects discussed are the meaning of the term species, the multiplication of organisms, and the struggle for existence, variation among individuals, the meaning of color and peculiar structural modifications among animals and plants, heredity, natural selection and the development of the mental faculties, natural selection and morals, recent theories accounting for the origin of species, and the influence of the scientific method on modern thought.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

BIOLOGY 5-6. *Botany, including the Principles of Forestry and Evolution of Plants.*

Biology 5. The work in the first part of the course deals with the mechanism of one of the most highly organized plants. In connection with this, Steven's *Plant Anatomy* is used as a text-book. The second part of the course treats of the life-history of such a plant. This is followed by a study of plant physiology, using Coulter, Barnes, and Cowles's *Text-book of Botany*. A study of the principles of forestry with the use of Greene's text-book completes the course.

Lectures, laboratory, text-books, and field work with our native trees.

Biology 6. The Evolution of Plants. A continuation of *Botany 1*. Types of all the plant groups from the simplest to the most highly organized are studied, their structure and life history receiving especial attention. This is made the basis for a consideration of the process of evolution in the plant world, and will include such general subjects as the origin of sex, the origin of the seed plants and its significance to man, and the origin of the coal beds. Lectures, laboratory work, and occasional field work.

Text-book, Strasburger's *A Text-book of Botany*.

Fee, \$6.00.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week through the year.

Professor CLARKE.

BIOLOGY 7-8. A continuation of *Biology 3-4*.

(a) *Zoölogy of the Chordata*. As in *Zoölogy of the Invertebrata*, instruction is by means of lectures, recitations, and laboratory work. The fishes, amphibia, reptiles, birds, and mammals are studied comparatively by means of dissections in the laboratory.

(b) *Embryology*. The second semester is given to a study of the development of the starfish, worm, frog, chick, and mammal. In the first three forms special attention is given to the early stages which follow fertilization. The work on the chick is outlined by a text-book, and followed in the laboratory by means of preparations, some of which are made by the student. It covers the development from the beginning of incubation to a stage in which the more important organs of the body have appeared. Mammalian development is compared with that of the chick, which it closely resembles, but is studied in the laboratory only by means of models and demonstration preparations.

Senior elective course; prerequisite, *Biology* 3-4.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

CHEMISTRY

Professor LEVERETT MEARS, Assistant Professor BRAINERD MEARS,
and Mr. BAUERLE.

CHEMISTRY 1-2. *General Chemistry and Qualitative Analysis.*

Chemistry 1. General Chemistry. The principles of chemistry are studied in connection with the non-metals and their compounds. This course is given by experimental lectures, supplemented by recitations and practical work in the laboratory.

Fee, \$3.00.

Four hours a week during the first semester.

Chemistry 2. Metallic Chemistry and Qualitative Analysis. A course of lectures is given on the occurrence, properties, and uses of the metals and their compounds.

Most of the time is devoted to qualitative analysis in the laboratory. This work includes the reactions of the principal bases and acids, their detection and separation. About 100 solutions and 100 solid substances, including about 50 minerals, are analyzed during the course. This course is a continuation of *Chemistry 1*.

Fee, \$10.00 and breakage.

Four periods a week, of two hours each, during the second semester.

Sophomore elective course.

CHEMISTRY 1-BIOLOGY 2. *Chemistry 1* and *Biology 2* may be taken together as constituting a Sophomore year-course. See *Biology 2*.

CHEMISTRY 3-4. *Organic Chemistry.*

Chemistry 3. Organic Chemistry. Lectures on the compounds of carbon, including the history of chemistry and its development to the present time.

This course completes the work begun in *Chemistry 1* and continued in *Chemistry 2*.

Chemistry 4. Advanced Organic Chemistry. This course is a continuation of the work begun in *Chemistry 3*. The principles

BIOLOGY 5-6. *Botany, including the Principles of Forestry and Evolution of Plants.*

Biology 5. The work in the first part of the course deals with the mechanism of one of the most highly organized plants. In connection with this, Steven's *Plant Anatomy* is used as a text-book. The second part of the course treats of the life-history of such a plant. This is followed by a study of plant physiology, using Coulter, Barnes, and Cowles's *Text-book of Botany*. A study of the principles of forestry with the use of Greene's text-book completes the course.

Lectures, laboratory, text-books, and field work with our native trees.

Biology 6. The Evolution of Plants. A continuation of *Botany 1*. Types of all the plant groups from the simplest to the most highly organized are studied, their structure and life history receiving especial attention. This is made the basis for a consideration of the process of evolution in the plant world, and will include such general subjects as the origin of sex, the origin of the seed plants and its significance to man, and the origin of the coal beds. Lectures, laboratory work, and occasional field work.

Text-book, Strasburger's *A Text-book of Botany*.

Fee, \$6.00.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week through the year.

Professor CLARKE.

BIOLOGY 7-8. A continuation of *Biology 3-4*.

(a) *Zoölogy of the Chordata.* As in *Zoölogy of the Invertebrata*, instruction is by means of lectures, recitations, and laboratory work. The fishes, amphibia, reptiles, birds, and mammals are studied comparatively by means of dissections in the laboratory.

(b) *Embryology.* The second semester is given to a study of the development of the starfish, worm, frog, chick, and mammal. In the first three forms special attention is given to the early stages which follow fertilization. The work on the chick is outlined by a text-book, and followed in the laboratory by means of preparations, some of which are made by the student. It covers the development from the beginning of incubation to a stage in which the more important organs of the body have appeared. Mammalian development is compared with that of the chick, which it closely resembles, but is studied in the laboratory only by means of models and demonstration preparations.

in the various periods of the earth's history but also of the changes that took place in their structure and habits, and, as far as possible, of the causes that produced these changes.

Geology 1. During the first semester that portion of the subject included in (a) *Dynamical Geology*, which deals with the forces that have shaped, and are now shaping the earth's surface, such as weathering and erosion, glaciers, volcanoes, earthquakes, etc., is considered.

(b) *Structural Geology* (with the exception of ore deposits, which will be considered in the second semester). In this division of the subject the structure of the earth's crust and the more important rocks and minerals of which it is composed are studied.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Geology 2. In the second semester the origin and occurrence of ores are first studied. This is followed by the major work of the semester, the study of evolutionary geology. The animals of the past, as shown by their fossil remains, are discussed particularly with regard to their bearing upon the theory of evolution. The fossils in the collections, and a number of casts, together with a large collection of lantern slides of restorations, are used in illustration.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Junior elective course; prerequisite, *Chemistry 1-2* or *Chemistry 1-Biology 2*.

Three hours a week through the year.

GEOLOGY 3. Advanced Geology. Beginning with a more detailed study of those subjects which are essential to the understanding of economic geology, the aim of the course is to afford the student a practical knowledge of the mineral products of the United States, such as coal, gypsum, salt, iron, lead, copper, and gold. Special attention is paid to the origin of the various deposits studied, with particular reference to the general principles governing the deposition and occurrence of each economic product discussed. Each student is required to present a typewritten report, as the result of his own observation of some local mine, quarry or other deposit of economic importance.

Senior elective course; prerequisite, *Geology 1-2*.

Three hours a week during the first semester.

MR. DAKE.

HISTORY 10. *Modern England and the British Colonial Empire (1740-1910).* This course comprises a survey of the rise of parliamentary government in England and the growth of the existing British colonial empire, from the reign of George II to the present day.

Senior elective course; prerequisite, *History 3-4* or *History 5-6*.
Three hours a week during the second semester.

Professor SMITH.

[**HISTORY 12.** *Roman History during the Revolution and the Empire.* The economic, social, political, and military history of the Roman world from the age of the Gracchi to that of Theodosius. Reading, lectures, quizzes, and written work.

Consultation of the Latin sources is encouraged but not required.

Special instruction is offered, if desired, to prospective teachers, or to any students wishing to attempt some original investigation. But the course aims primarily, while not neglecting great personalities, to survey for the general student of history or of the classics the Roman foundations of European civilization.

Senior elective course; prerequisite, *Greek 11*.

Three hours a week during the second semester.

Greek 11 and *History 12* constitute a Senior year course. See *Greek 11*.

Omitted 1912-1913.

Assistant Professor CLARK.]

PHILOSOPHY

Professor RUSSELL and Assistant Professor PRATT.

PHILOSOPHY 1-2. *Elementary Psychology and Philosophy.* The first semester will be devoted to an introductory course in psychology, the aim of which will be to comprehend the essential facts of the mental life. Angell's *Psychology* will be used and there will be supplementary lectures upon the more important phenomena of abnormal psychology. In the second semester the chief problems of philosophy will be considered by means of short papers, discussions, and a text-book. The aim of the course will be to train the student in accurate thinking and to enable him to come to intelligent conclusions on the problems of philosophy for himself.

The first semester.

Professor RUSSELL.

The second semester.

Assistant Professor PRATT.

Junior elective course.

Three hours a week through the year.

PHILOSOPHY 3. *Ethics*. The attempt is made to discover the meaning and basis of duty by discussions, original papers, and reports.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the first semester.

Assistant Professor PRATT.

PHILOSOPHY 4. *An Advanced Course in Ethics*. The aim of this course is to study the application of ethical principles and ideals to present-day problems in social and industrial organizations.

Senior elective course; prerequisite, *Philosophy 3*.

Three hours a week during the second semester.

Professor RUSSELL.

PHILOSOPHY 5. *Advanced Psychology*. The subject for this year is Social Psychology. After a study of McDougal's *Social Psychology*, various psychological aspects of society will be taken up in lectures and by reports from members of the class.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the first semester.

Assistant Professor PRATT.

PHILOSOPHY 6. A course in the Philosophy of William James and of Henri Bergson. In this course the students read a large part of the writings of these philosophers in connection with the critical expositions which form the content of the lectures given.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the second semester.

Professor RUSSELL.

PHILOSOPHY 7. A course in the History of Greek Philosophy. Windeband's *History of Ancient Philosophy* is made the basis of this course, and its use is supplemented by the reading of first-hand sources, papers upon special topics, and lectures.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the first semester.

Professor RUSSELL.

PHILOSOPHY 8. *History of Modern Philosophy*. This course carries on into modern philosophy the historical study begun by the student in the preceding course. It is based on a text-book supplemented by assigned reading from the leading modern phi-

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Senior elective course; prerequisite, *History 3-4* or *History 5-6*.

Three hours a week during the second semester.

Professor SMITH.

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Consultation of the Latin sources is encouraged but not required.

Special instruction is offered, if desired, to prospective teachers, or to any students wishing to attempt some original investigation. But the course aims primarily, while not neglecting great personalities, to survey for the general student of history or of the classics the Roman foundations of European civilization.

Senior elective course; prerequisite, *Greek 11*.

Three hours a week during the second semester.

Greek 11 and *History 12* constitute a Senior year course. See *Greek 11*.

Omitted 1912-1913.

Assistant Professor CLARK.]

PHILOSOPHY

Professor RUSSELL and Assistant Professor PRATT.

PHILOSOPHY 1-2. *Elementary Psychology and Philosophy.* The first semester will be devoted to an introductory course in psychology, the aim of which will be to comprehend the essential facts of the mental life. Angell's *Psychology* will be used and there will be supplementary lectures upon the more important phenomena of abnormal psychology. In the second semester the chief problems of philosophy will be considered by means of short papers, discussions, and a text-book. The aim of the course will be to train the student in accurate thinking and to enable him to come to intelligent conclusions on the problems of philosophy for himself.

The first semester.

Professor RUSSELL.

The second semester.

Assistant Professor PRATT.

Junior elective course.

Three hours a week through the year.

RELIGION 5. *Philosophy of Religion. (Theism.)* The reasons are given for believing in a reality corresponding to the assumptions and aspirations of religion. Objections and anti-theistic theories are considered. With the help of the comparative study of religions, an attempt is made to distinguish the essentials of religious belief.

Text-books, lectures, and discussions. Special topics are assigned for more extended study.

Senior elective course; prerequisite, *Religion 1-2* or *Philosophy 1-2*.

Three hours a week during the first semester.

Professor MORTON.

SCIENCES

ASTRONOMY

Professor MILHAM.

ASTRONOMY 1-2. This year course is divided into two parts, descriptive astronomy and an introduction to spherical and practical astronomy. In the descriptive astronomy a text-book, Young's *Manual of Astronomy*, is used as the basis of instruction. Numerous supplementary lectures are given and the course is illustrated by charts and photographs. Such topics as the time service of the country, the origin of our calendar, the presence of an atmosphere in the case of the moon and the planets, and the cosmogony, are treated at length. During the second part of the course lectures on modern observatories, their location, equipment, and work, are given. Experimental demonstration and practical exercises in the observatory constitute a large part of the instruction during the last part of the second semester.

Junior elective course; prerequisite, *Physics 1-2*.

Three hours a week through the year.

ASTRONOMY 3. Theoretical Astronomy. The mathematical side of astronomy is here considered. Elliptic motion, place in orbit, place in space, and the computation of orbits are treated.

Senior elective course; prerequisite, *Astronomy 1-2* and *Mathematics 5-6*.

Three hours a week during the first semester.

ASTRONOMY 4. Spherical and Practical Astronomy. This course consists of spherical trigonometry and its application to astronomy and the use of astronomical instruments in the determination of latitude, longitude, and time.

Senior elective course; prerequisite, *Astronomy 1-2* and *Mathematics 3-4*.

Three hours a week during the second semester.

BIOLOGY

Professor CLARKE and Professor KELLOGG.

BIOLOGY 2. A study of living matter and of life.

Text-book, lectures, oral and written recitations, laboratory exercises.

Sophomore elective course; prerequisite, *Chemistry 1*.

Four hours a week during the second semester.

Fee, \$2.00.

Professor CLARKE.

Biology 2 is to be taken only as the second semester of the Sophomore year-course, *Chemistry 1-Biology 2*. See *Chemistry 1*.

BIOLOGY 3-4. The year's work includes two subjects:

(a) *Zoölogy of the Invertebrata*. This part of the course extends from September to about the last of March. Instruction is by means of lectures, recitations, and laboratory work. The structure and functions of several single-celled organisms are studied in the laboratory by means of the microscope. Among the many-celled forms examined are sponges, fresh-water hydras, marine hydroids, the star-fish, sea-urchins, worms, crayfish, grasshopper, fresh-water and marine bivalves, and the squid. The object of this work is chiefly to demonstrate the meanings of homologies and adaptations, and to afford an appreciation of the value of the data employed in inductions considered later in the course. Laboratory work is recorded by each student in simple outline drawings.

(b) *Theories of Biology*. The remainder of the year is given to a series of lectures, with recitations, on the general problems of biology. Laboratory work in (a) is continued during this period.

The course considers the views of the early Transmutationists, of Lamarck, Erasmus Darwin, and others, and enters fully into a discussion of the theory of natural selection of Darwin and Wallace. Attention is given to early criticisms of the theory, and more particularly to recent observations that tend to limit it as a universal explanation of the structural and functional peculiarities of organisms.

Among the subjects discussed are the meaning of the term species, the multiplication of organisms, and the struggle for existence, variation among individuals, the meaning of color and peculiar structural modifications among animals and plants, heredity, natural selection and the development of the mental faculties, natural selection and morals, recent theories accounting for the origin of species, and the influence of the scientific method on modern thought.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

BIOLOGY 5-6. *Botany, including the Principles of Forestry and Evolution of Plants.*

Biology 5. The work in the first part of the course deals with the mechanism of one of the most highly organized plants. In connection with this, Steven's *Plant Anatomy* is used as a text-book. The second part of the course treats of the life-history of such a plant. This is followed by a study of plant physiology, using Coulter, Barnes, and Cowles's *Text-book of Botany*. A study of the principles of forestry with the use of Greene's text-book completes the course.

Lectures, laboratory, text-books, and field work with our native trees.

Biology 6. The Evolution of Plants. A continuation of *Botany 1*. Types of all the plant groups from the simplest to the most highly organized are studied, their structure and life history receiving especial attention. This is made the basis for a consideration of the process of evolution in the plant world, and will include such general subjects as the origin of sex, the origin of the seed plants and its significance to man, and the origin of the coal beds. Lectures, laboratory work, and occasional field work.

Text-book, Strasburger's *A Text-book of Botany*.

Fee, \$6.00.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week through the year.

Professor CLARKE

BIOLOGY 7-8. A continuation of *Biology 3-4*.

(a) *Zoölogy of the Chordata*. As in *Zoölogy of the Invertebrata*, instruction is by means of lectures, recitations, and laboratory work. The fishes, amphibia, reptiles, birds, and mammals are studied comparatively by means of dissections in the laboratory.

(b) *Embryology*. The second semester is given to a study of the development of the starfish, worm, frog, chick, and mammal. In the first three forms special attention is given to the early stages which follow fertilization. The work on the chick is outlined by a text-book, and followed in the laboratory by means of preparations, some of which are made by the student. It covers the development from the beginning of incubation to a stage in which the more important organs of the body have appeared. Mammalian development is compared with that of the chick, which it closely resembles, but is studied in the laboratory only by means of models and demonstration preparations.

Senior elective course; prerequisite, *Biology 3-4*.
Three exercises a week, of two hours each, through the year.
Fee, \$10.00.

Professor KELLOGG.

CHEMISTRY

Professor LEVERETT MEARS, Assistant Professor BRAINERD MEARS,
and Mr. BAUERLE.

CHEMISTRY 1-2. *General Chemistry and Qualitative Analysis.*

Chemistry 1. General Chemistry. The principles of chemistry are studied in connection with the non-metals and their compounds. This course is given by experimental lectures, supplemented by recitations and practical work in the laboratory.

Fee, \$3.00.

Four hours a week during the first semester.

Chemistry 2. Metallic Chemistry and Qualitative Analysis. A course of lectures is given on the occurrence, properties, and uses of the metals and their compounds.

Most of the time is devoted to qualitative analysis in the laboratory. This work includes the reactions of the principal bases and acids, their detection and separation. About 100 solutions and 100 solid substances, including about 50 minerals, are analyzed during the course. This course is a continuation of *Chemistry 1*.

Fee, \$10.00 and breakage.

Four periods a week, of two hours each, during the second semester.

Sophomore elective course.

CHEMISTRY 1-BIOLOGY 2. *Chemistry 1* and *Biology 2* may be taken together as constituting a Sophomore year-course. See *Biology 2*.

CHEMISTRY 3-4. *Organic Chemistry.*

Chemistry 3. Organic Chemistry. Lectures on the compounds of carbon, including the history of chemistry and its development to the present time.

This course completes the work begun in *Chemistry 1* and continued in *Chemistry 2*.

Chemistry 4. Advanced Organic Chemistry. This course is a continuation of the work begun in *Chemistry 3*. The principles

of organic chemistry are applied to the preparation and analysis of organic compounds in the laboratory with a discussion of the reactions involved. Cohen's book on organic preparations is used.

Junior elective course; prerequisite, *Chemistry* 1-2.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

CHEMISTRY 5. *Quantitative Analysis.* This course embraces the quantitative determination and separation of the principal bases and acids. Both gravimetric and volumetric methods are employed.

Senior elective course; prerequisite, *Chemistry* 3-4.

Three exercises a week, of two hours each, during the first semester.

Fee, \$10.00 and breakage.

Professor LEVERETT MEARS and

Assistant Professor BRAINERD MEARS.

CHEMISTRY 6. *Physical and Advanced Inorganic Chemistry.* This course consists of lectures on the modern theories of physical chemistry together with experimental work in the laboratory. A course is also given in the preparation of inorganic compounds with a discussion of the reactions involved.

For those who prefer it, a parallel course in physiological chemistry may be offered.

Senior elective course; prerequisite, *Chemistry* 3-4.

Three periods a week, of two hours each, during the second semester.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

GEOLOGY AND MINERALOGY

Professor CLELAND and Mr. DAKE.

GEOLOGY 1-2. *General Geology.* The purpose of the course in general geology is to give the student such a knowledge of the principles of geology that he may be able to understand what he sees of the earth's surface and to know what force or forces have produced this feature of the landscape and what that feature. A study is also made of the forces themselves, such as, for example, glaciers, volcanoes, earthquakes, and erosion. Some time is spent on the life of the past, not only in a description of the animals that lived

in the various periods of the earth's history but also of the changes that took place in their structure and habits, and, as far as possible, of the causes that produced these changes.

Geology 1. During the first semester that portion of the subject included in (a) *Dynamical Geology*, which deals with the forces that have shaped, and are now shaping the earth's surface, such as weathering and erosion, glaciers, volcanoes, earthquakes, etc., is considered.

(b) *Structural Geology* (with the exception of ore deposits, which will be considered in the second semester). In this division of the subject the structure of the earth's crust and the more important rocks and minerals of which it is composed are studied.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Geology 2. In the second semester the origin and occurrence of ores are first studied. This is followed by the major work of the semester, the study of evolutionary geology. The animals of the past, as shown by their fossil remains, are discussed particularly with regard to their bearing upon the theory of evolution. The fossils in the collections, and a number of casts, together with a large collection of lantern slides of restorations, are used in illustration.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Junior elective course; prerequisite, *Chemistry 1-2* or *Chemistry 1-Biology 2*.

Three hours a week through the year.

GEOLOGY 3. Advanced Geology. Beginning with a more detailed study of those subjects which are essential to the understanding of economic geology, the aim of the course is to afford the student a practical knowledge of the mineral products of the United States, such as coal, gypsum, salt, iron, lead, copper, and gold. Special attention is paid to the origin of the various deposits studied, with particular reference to the general principles governing the deposition and occurrence of each economic product discussed. Each student is required to present a typewritten report, as the result of his own observation of some local mine, quarry or other deposit of economic importance.

Senior elective course; prerequisite, *Geology 1-2*.

Three hours a week during the first semester.

MR. DAKE.

of organic chemistry are applied to the preparation and analysis of organic compounds in the laboratory with a discussion of the reactions involved. Cohen's book on organic preparations is used.

Junior elective course; prerequisite, *Chemistry 1-2*.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

CHEMISTRY 5. *Quantitative Analysis.* This course embraces the quantitative determination and separation of the principal bases and acids. Both gravimetric and volumetric methods are employed.

Senior elective course; prerequisite, *Chemistry 3-4*.

Three exercises a week, of two hours each, during the first semester.

Fee, \$10.00 and breakage.

Professor LEVERETT MEARS and

Assistant Professor BRAINERD MEARS.

CHEMISTRY 6. *Physical and Advanced Inorganic Chemistry.* This course consists of lectures on the modern theories of physical chemistry together with experimental work in the laboratory. A course is also given in the preparation of inorganic compounds with a discussion of the reactions involved.

For those who prefer it, a parallel course in physiological chemistry may be offered.

Senior elective course; prerequisite, *Chemistry 3-4*.

Three periods a week, of two hours each, during the second semester.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

GEOLOGY AND MINERALOGY

Professor CLELAND and Mr. DAKE.

GEOLOGY 1-2. *General Geology.* The purpose of the course in general geology is to give the student such a knowledge of the principles of geology that he may be able to understand what he sees of the earth's surface and to know what force or forces have produced this feature of the landscape and what that feature. A study is also made of the forces themselves, such as, for example, glaciers, volcanoes, earthquakes, and erosion. Some time is spent on the life of the past, not only in a description of the animals that lived

PHILOSOPHY 3. *Ethics*. The attempt is made to discover the meaning and basis of duty by discussions, original papers, and reports.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the first semester.

Assistant Professor PRATT.

PHILOSOPHY 4. *An Advanced Course in Ethics*. The aim of this course is to study the application of ethical principles and ideals to present-day problems in social and industrial organizations.

Senior elective course; prerequisite, *Philosophy 3*.

Three hours a week during the second semester.

Professor RUSSELL.

PHILOSOPHY 5. *Advanced Psychology*. The subject for this year is Social Psychology. After a study of McDougal's *Social Psychology*, various psychological aspects of society will be taken up in lectures and by reports from members of the class.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the first semester.

Assistant Professor PRATT.

PHILOSOPHY 6. A course in the Philosophy of William James and of Henri Bergson. In this course the students read a large part of the writings of these philosophers in connection with the critical expositions which form the content of the lectures given.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the second semester.

Professor RUSSELL.

PHILOSOPHY 7. A course in the History of Greek Philosophy. Windeband's *History of Ancient Philosophy* is made the basis of this course, and its use is supplemented by the reading of first-hand sources, papers upon special topics, and lectures.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the first semester.

Professor RUSSELL.

PHILOSOPHY 8. *History of Modern Philosophy*. This course carries on into modern philosophy the historical study begun by the student in the preceding course. It is based on a text-book supplemented by assigned reading from the leading modern phi-

losophers, and lectures on the more difficult questions, with occasional papers and much informal discussion.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the second semester.

Assistant Professor PRATT.

RELIGION

Professor MORTON and Assistant Professor PRATT.

RELIGION 1-2. *History and Philosophy of Religion.*

Religion 1. History of Religion. The more important ideas and institutions of the religion of primitive peoples are first considered, after which the religions of Egypt, India, Persia, Israel, and Islam are taken up in some detail. The instruction is by lectures with short quizzes, a considerable amount of required reading from the *Sacred Books*, and numerous reports on them. In addition to this, each student chooses some topic for independent investigation and writes a thesis of some length on it.

The first semester.

Assistant Professor PRATT.

Religion 2. Introduction to the Philosophy of Religion. Of the three subjects considered in the philosophy of religion,—Nature, Man, God,—this course deals with the first two. The main elements of religion are studied as facts of scientific knowledge, and as attempted solutions of the problems of existence. The philosophical movement of the Renaissance serves as an approach to the subject. Lectures and discussions.

The second semester.

Professor MORTON.

Junior elective course.

Three hours a week through the year.

RELIGION 3-4. *Medieval Religion and Philosophy.* Taylor's *Medieval Mind* is taken as the text-book, and Dante's works in English translation as illustrative material. The course includes a general survey of the philosophy of the Middle Ages. Lectures, discussions, and preparation of special topics by members of the class.

Senior elective course; prerequisite, *Religion 1-2* or *Philosophy 1-2*.

Three hours a week through the year.

Professor MORTON.

RELIGION 5. *Philosophy of Religion. (Theism.)* The reasons are given for believing in a reality corresponding to the assumptions and aspirations of religion. Objections and anti-theistic theories are considered. With the help of the comparative study of religions, an attempt is made to distinguish the essentials of religious belief.

Text-books, lectures, and discussions. Special topics are assigned for more extended study.

Senior elective course; prerequisite, *Religion 1-2* or *Philosophy 1-2*.

Three hours a week during the first semester.

Professor MORTON.

SCIENCES

ASTRONOMY

Professor MILHAM.

ASTRONOMY 1-2. This year course is divided into two parts, descriptive astronomy and an introduction to spherical and practical astronomy. In the descriptive astronomy a text-book, Young's *Manual of Astronomy*, is used as the basis of instruction. Numerous supplementary lectures are given and the course is illustrated by charts and photographs. Such topics as the time service of the country, the origin of our calendar, the presence of an atmosphere in the case of the moon and the planets, and the cosmogony, are treated at length. During the second part of the course lectures on modern observatories, their location, equipment, and work, are given. Experimental demonstration and practical exercises in the observatory constitute a large part of the instruction during the last part of the second semester.

Junior elective course; prerequisite, *Physics 1-2*.

Three hours a week through the year.

ASTRONOMY 3. Theoretical Astronomy. The mathematical side of astronomy is here considered. Elliptic motion, place in orbit, place in space, and the computation of orbits are treated.

Senior elective course; prerequisite, *Astronomy 1-2* and *Mathematics 5-6*.

Three hours a week during the first semester.

ASTRONOMY 4. Spherical and Practical Astronomy. This course consists of spherical trigonometry and its application to astronomy and the use of astronomical instruments in the determination of latitude, longitude, and time.

Senior elective course; prerequisite, *Astronomy 1-2* and *Mathematics 3-4*.

Three hours a week during the second semester.

BIOLOGY

Professor CLARKE and Professor KELLOGG.

BIOLOGY 2. A study of living matter and of life.

Text-book, lectures, oral and written recitations, laboratory exercises.

Sophomore elective course; prerequisite, *Chemistry 1*.

Four hours a week during the second semester.

Fee, \$2.00.

Professor CLARKE.

Biology 2 is to be taken only as the second semester of the Sophomore year-course, *Chemistry 1-Biology 2*. See *Chemistry 1*.

BIOLOGY 3-4. The year's work includes two subjects:

(a) *Zoölogy of the Invertebrata*. This part of the course extends from September to about the last of March. Instruction is by means of lectures, recitations, and laboratory work. The structure and functions of several single-celled organisms are studied in the laboratory by means of the microscope. Among the many-celled forms examined are sponges, fresh-water hydras, marine hydroids, the star-fish, sea-urchins, worms, crayfish, grasshopper, fresh-water and marine bivalves, and the squid. The object of this work is chiefly to demonstrate the meanings of homologies and adaptations, and to afford an appreciation of the value of the data employed in inductions considered later in the course. Laboratory work is recorded by each student in simple outline drawings.

(b) *Theories of Biology*. The remainder of the year is given to a series of lectures, with recitations, on the general problems of biology. Laboratory work in (a) is continued during this period.

The course considers the views of the early Transmutationists, of Lamarck, Erasmus Darwin, and others, and enters fully into a discussion of the theory of natural selection of Darwin and Wallace. Attention is given to early criticisms of the theory, and more particularly to recent observations that tend to limit it as a universal explanation of the structural and functional peculiarities of organisms.

Among the subjects discussed are the meaning of the term species, the multiplication of organisms, and the struggle for existence, variation among individuals, the meaning of color and peculiar structural modifications among animals and plants, heredity, natural selection and the development of the mental faculties, natural selection and morals, recent theories accounting for the origin of species, and the influence of the scientific method on modern thought.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

BIOLOGY 5-6. *Botany, including the Principles of Forestry and Evolution of Plants.*

Biology 5. The work in the first part of the course deals with the mechanism of one of the most highly organized plants. In connection with this, Steven's *Plant Anatomy* is used as a text-book. The second part of the course treats of the life-history of such a plant. This is followed by a study of plant physiology, using Coulter, Barnes, and Cowles's *Text-book of Botany*. A study of the principles of forestry with the use of Greene's text-book completes the course.

Lectures, laboratory, text-books, and field work with our native trees.

Biology 6. The Evolution of Plants. A continuation of *Botany 1*. Types of all the plant groups from the simplest to the most highly organized are studied, their structure and life history receiving especial attention. This is made the basis for a consideration of the process of evolution in the plant world, and will include such general subjects as the origin of sex, the origin of the seed plants and its significance to man, and the origin of the coal beds. Lectures, laboratory work, and occasional field work.

Text-book, Strasburger's *A Text-book of Botany*.

Fee, \$6.00.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week through the year.

Professor CLARKE.

BIOLOGY 7-8. A continuation of *Biology 3-4*.

(a) *Zoölogy of the Chordata*. As in *Zoölogy of the Invertebrata*, instruction is by means of lectures, recitations, and laboratory work. The fishes, amphibia, reptiles, birds, and mammals are studied comparatively by means of dissections in the laboratory.

(b) *Embryology*. The second semester is given to a study of the development of the starfish, worm, frog, chick, and mammal. In the first three forms special attention is given to the early stages which follow fertilization. The work on the chick is outlined by a text-book, and followed in the laboratory by means of preparations, some of which are made by the student. It covers the development from the beginning of incubation to a stage in which the more important organs of the body have appeared. Mammalian development is compared with that of the chick, which it closely resembles, but is studied in the laboratory only by means of models and demonstration preparations.

Senior elective course; prerequisite, *Biology* 3-4.
Three exercises a week, of two hours each, through the year.
Fee, \$10.00.

Professor KELLOGG.

CHEMISTRY

Professor LEVERETT MEARS, Assistant Professor BRAINERD MEARS,
and Mr. BAUERLE.

CHEMISTRY 1-2. *General Chemistry and Qualitative Analysis.*

Chemistry 1. General Chemistry. The principles of chemistry are studied in connection with the non-metals and their compounds. This course is given by experimental lectures, supplemented by recitations and practical work in the laboratory.

Fee, \$3.00.

Four hours a week during the first semester.

Chemistry 2. Metallic Chemistry and Qualitative Analysis. A course of lectures is given on the occurrence, properties, and uses of the metals and their compounds.

Most of the time is devoted to qualitative analysis in the laboratory. This work includes the reactions of the principal bases and acids, their detection and separation. About 100 solutions and 100 solid substances, including about 50 minerals, are analyzed during the course. This course is a continuation of *Chemistry 1*.

Fee, \$10.00 and breakage.

Four periods a week, of two hours each, during the second semester.

Sophomore elective course.

CHEMISTRY 1-BIOLOGY 2. *Chemistry 1* and *Biology 2* may be taken together as constituting a Sophomore year-course. See *Biology 2*.

CHEMISTRY 3-4. *Organic Chemistry.*

Chemistry 3. Organic Chemistry. Lectures on the compounds of carbon, including the history of chemistry and its development to the present time.

This course completes the work begun in *Chemistry 1* and continued in *Chemistry 2*.

Chemistry 4. Advanced Organic Chemistry. This course is a continuation of the work begun in *Chemistry 3*. The principles

of organic chemistry are applied to the preparation and analysis of organic compounds in the laboratory with a discussion of the reactions involved. Cohen's book on organic preparations is used.

Junior elective course; prerequisite, *Chemistry* 1-2.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

CHEMISTRY 5. *Quantitative Analysis.* This course embraces the quantitative determination and separation of the principal bases and acids. Both gravimetric and volumetric methods are employed.

Senior elective course; prerequisite, *Chemistry* 3-4.

Three exercises a week, of two hours each, during the first semester.

Fee, \$10.00 and breakage.

Professor LEVERETT MEARS and

Assistant Professor BRAINERD MEARS.

CHEMISTRY 6. *Physical and Advanced Inorganic Chemistry.* This course consists of lectures on the modern theories of physical chemistry together with experimental work in the laboratory. A course is also given in the preparation of inorganic compounds with a discussion of the reactions involved.

For those who prefer it, a parallel course in physiological chemistry may be offered.

Senior elective course; prerequisite, *Chemistry* 3-4.

Three periods a week, of two hours each, during the second semester.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

GEOLOGY AND MINERALOGY

Professor CLELAND and Mr. DAKE.

GEOLOGY 1-2. *General Geology.* The purpose of the course in general geology is to give the student such a knowledge of the principles of geology that he may be able to understand what he sees of the earth's surface and to know what force or forces have produced this feature of the landscape and what that feature. A study is also made of the forces themselves, such as, for example, glaciers, volcanoes, earthquakes, and erosion. Some time is spent on the life of the past, not only in a description of the animals that lived

in the various periods of the earth's history but also of the changes that took place in their structure and habits, and, as far as possible, of the causes that produced these changes.

Geology 1. During the first semester that portion of the subject included in (a) *Dynamical Geology*, which deals with the forces that have shaped, and are now shaping the earth's surface, such as weathering and erosion, glaciers, volcanoes, earthquakes, etc., is considered.

(b) *Structural Geology* (with the exception of ore deposits, which will be considered in the second semester). In this division of the subject the structure of the earth's crust and the more important rocks and minerals of which it is composed are studied.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Geology 2. In the second semester the origin and occurrence of ores are first studied. This is followed by the major work of the semester, the study of evolutionary geology. The animals of the past, as shown by their fossil remains, are discussed particularly with regard to their bearing upon the theory of evolution. The fossils in the collections, and a number of casts, together with a large collection of lantern slides of restorations, are used in illustration.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Junior elective course; prerequisite, *Chemistry 1-2* or *Chemistry 1-Biology 2*.

Three hours a week through the year.

GEOLOGY 3. Advanced Geology. Beginning with a more detailed study of those subjects which are essential to the understanding of economic geology, the aim of the course is to afford the student a practical knowledge of the mineral products of the United States, such as coal, gypsum, salt, iron, lead, copper, and gold. Special attention is paid to the origin of the various deposits studied, with particular reference to the general principles governing the deposition and occurrence of each economic product discussed. Each student is required to present a typewritten report, as the result of his own observation of some local mine, quarry or other deposit of economic importance.

Senior elective course; prerequisite, *Geology 1-2*.

Three hours a week during the first semester.

Mr. DAKE.

HISTORY 10. *Modern England and the British Colonial Empire (1740-1910).* This course comprises a survey of the rise of parliamentary government in England and the growth of the existing British colonial empire, from the reign of George II to the present day.

Senior elective course; prerequisite, *History 3-4* or *History 5-6*.

Three hours a week during the second semester.

Professor SMITH.

[**HISTORY 12. *Roman History during the Revolution and the Empire.*** The economic, social, political, and military history of the Roman world from the age of the Gracchi to that of Theodosius. Reading, lectures, quizzes, and written work.

Consultation of the Latin sources is encouraged but not required.

Special instruction is offered, if desired, to prospective teachers, or to any students wishing to attempt some original investigation. But the course aims primarily, while not neglecting great personalities, to survey for the general student of history or of the classics the Roman foundations of European civilization.

Senior elective course; prerequisite, *Greek 11*.

Three hours a week during the second semester.

Greek 11 and *History 12* constitute a Senior year course. See *Greek 11*.

Omitted 1912-1913.

Assistant Professor CLARK.]

PHILOSOPHY

Professor RUSSELL and Assistant Professor PRATT.

PHILOSOPHY 1-2. *Elementary Psychology and Philosophy.* The first semester will be devoted to an introductory course in psychology, the aim of which will be to comprehend the essential facts of the mental life. Angell's *Psychology* will be used and there will be supplementary lectures upon the more important phenomena of abnormal psychology. In the second semester the chief problems of philosophy will be considered by means of short papers, discussions, and a text-book. The aim of the course will be to train the student in accurate thinking and to enable him to come to intelligent conclusions on the problems of philosophy for himself.

The first semester.

Professor RUSSELL.

The second semester.

Assistant Professor PRATT.

Junior elective course.

Three hours a week through the year.

PHILOSOPHY 3. *Ethics*. The attempt is made to discover the meaning and basis of duty by discussions, original papers, and reports.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the first semester.

Assistant Professor PRATT.

PHILOSOPHY 4. *An Advanced Course in Ethics*. The aim of this course is to study the application of ethical principles and ideals to present-day problems in social and industrial organizations.

Senior elective course; prerequisite, *Philosophy 3*.

Three hours a week during the second semester.

Professor RUSSELL.

PHILOSOPHY 5. *Advanced Psychology*. The subject for this year is Social Psychology. After a study of McDougal's *Social Psychology*, various psychological aspects of society will be taken up in lectures and by reports from members of the class.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the first semester.

Assistant Professor PRATT.

PHILOSOPHY 6. A course in the Philosophy of William James and of Henri Bergson. In this course the students read a large part of the writings of these philosophers in connection with the critical expositions which form the content of the lectures given.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the second semester.

Professor RUSSELL.

PHILOSOPHY 7. A course in the History of Greek Philosophy. Windeband's *History of Ancient Philosophy* is made the basis of this course, and its use is supplemented by the reading of first-hand sources, papers upon special topics, and lectures.

Senior elective course; prerequisite, *Philosophy 1-2*.

Three hours a week during the first semester.

Professor RUSSELL.

PHILOSOPHY 8. *History of Modern Philosophy*. This course carries on into modern philosophy the historical study begun by the student in the preceding course. It is based on a text-book supplemented by assigned reading from the leading modern phi-

losophers, and lectures on the more difficult questions, with occasional papers and much informal discussion.

Senior elective course; prerequisite, *Philosophy* 1-2.

Three hours a week during the second semester.

Assistant Professor PRATT.

RELIGION

Professor MORTON and Assistant Professor PRATT.

RELIGION 1-2. *History and Philosophy of Religion.*

Religion 1. History of Religion. The more important ideas and institutions of the religion of primitive peoples are first considered, after which the religions of Egypt, India, Persia, Israel, and Islam are taken up in some detail. The instruction is by lectures with short quizzes, a considerable amount of required reading from the *Sacred Books*, and numerous reports on them. In addition to this, each student chooses some topic for independent investigation and writes a thesis of some length on it.

The first semester.

Assistant Professor PRATT.

Religion 2. Introduction to the Philosophy of Religion. Of the three subjects considered in the philosophy of religion,—Nature, Man, God,—this course deals with the first two. The main elements of religion are studied as facts of scientific knowledge, and as attempted solutions of the problems of existence. The philosophical movement of the Renaissance serves as an approach to the subject. Lectures and discussions.

The second semester.

Professor MORTON.

Junior elective course.

Three hours a week through the year.

RELIGION 3-4. *Medieval Religion and Philosophy.* Taylor's *Medieval Mind* is taken as the text-book, and Dante's works in English translation as illustrative material. The course includes a general survey of the philosophy of the Middle Ages. Lectures, discussions, and preparation of special topics by members of the class.

Senior elective course; prerequisite, *Religion* 1-2 or *Philosophy* 1-2.

Three hours a week through the year.

Professor MORTON.

RELIGION 5. *Philosophy of Religion. (Theism.)* The reasons are given for believing in a reality corresponding to the assumptions and aspirations of religion. Objections and anti-theistic theories are considered. With the help of the comparative study of religions, an attempt is made to distinguish the essentials of religious belief.

Text-books, lectures, and discussions. Special topics are assigned for more extended study.

Senior elective course; prerequisite, *Religion 1-2* or *Philosophy 1-2*.

Three hours a week during the first semester.

Professor MORTON.

SCIENCES

ASTRONOMY

Professor MILHAM.

ASTRONOMY 1-2. This year course is divided into two parts, descriptive astronomy and an introduction to spherical and practical astronomy. In the descriptive astronomy a text-book, Young's *Manual of Astronomy*, is used as the basis of instruction. Numerous supplementary lectures are given and the course is illustrated by charts and photographs. Such topics as the time service of the country, the origin of our calendar, the presence of an atmosphere in the case of the moon and the planets, and the cosmogony, are treated at length. During the second part of the course lectures on modern observatories, their location, equipment, and work, are given. Experimental demonstration and practical exercises in the observatory constitute a large part of the instruction during the last part of the second semester.

Junior elective course; prerequisite, *Physics 1-2*.

Three hours a week through the year.

ASTRONOMY 3. *Theoretical Astronomy.* The mathematical side of astronomy is here considered. Elliptic motion, place in orbit, place in space, and the computation of orbits are treated.

Senior elective course; prerequisite, *Astronomy 1-2* and *Mathematics 5-6*.

Three hours a week during the first semester.

ASTRONOMY 4. *Spherical and Practical Astronomy.* This course consists of spherical trigonometry and its application to astronomy and the use of astronomical instruments in the determination of latitude, longitude, and time.

Senior elective course; prerequisite, *Astronomy 1-2* and *Mathematics 3-4*.

Three hours a week during the second semester.

BIOLOGY

Professor CLARKE and Professor KELLOGG.

BIOLOGY 2. *A study of living matter and of life.*

Text-book, lectures, oral and written recitations, laboratory exercises.

Sophomore elective course; prerequisite, *Chemistry 1*.

Four hours a week during the second semester.

Fee, \$2.00.

Professor CLARKE.

Biology 2 is to be taken only as the second semester of the Sophomore year-course, *Chemistry 1-Biology 2*. See *Chemistry 1*.

BIOLOGY 3-4. The year's work includes two subjects:

(a) *Zoölogy of the Invertebrata*. This part of the course extends from September to about the last of March. Instruction is by means of lectures, recitations, and laboratory work. The structure and functions of several single-celled organisms are studied in the laboratory by means of the microscope. Among the many-celled forms examined are sponges, fresh-water hydras, marine hydroids, the star-fish, sea-urchins, worms, crayfish, grass-hopper, fresh-water and marine bivalves, and the squid. The object of this work is chiefly to demonstrate the meanings of homologies and adaptations, and to afford an appreciation of the value of the data employed in inductions considered later in the course. Laboratory work is recorded by each student in simple outline drawings.

(b) *Theories of Biology*. The remainder of the year is given to a series of lectures, with recitations, on the general problems of biology. Laboratory work in (a) is continued during this period.

The course considers the views of the early Transmutationists, of Lamarck, Erasmus Darwin, and others, and enters fully into a discussion of the theory of natural selection of Darwin and Wallace. Attention is given to early criticisms of the theory, and more particularly to recent observations that tend to limit it as a universal explanation of the structural and functional peculiarities of organisms.

Among the subjects discussed are the meaning of the term species, the multiplication of organisms, and the struggle for existence, variation among individuals, the meaning of color and peculiar structural modifications among animals and plants, heredity, natural selection and the development of the mental faculties, natural selection and morals, recent theories accounting for the origin of species, and the influence of the scientific method on modern thought.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

Rev. Prof. Henry van Dyke, D.D.	Princeton University
Rev. A. F. Schauffler, D.D.	New York, N. Y.
Rev. Francis G. Peabody, D.D.	Cambridge, Mass.
Rev. George A. Gordon, D.D.	Boston, Mass.
Dean William M. Grosvenor, D.D.	New York, N. Y.
Rev. H. P. Dewey, D.D.	Minneapolis, Minn.

LIBRARY

The College Library contains seventy-three thousand volumes, exclusive of duplicates, and about twenty thousand pamphlets. The card catalogue now covers the entire collection, bound and unbound. For the maintenance and enlargement of the library, seven thousand five hundred and fifty dollars are expended annually. The Lawrence, Jonathan Phillips, J. Ruthven Adriance, D. A. Jones, Class of 1878, Josiah William Wheeler, and the Stephen and Mary Stickney Memorial funds represent a capital sum of about fifty-nine thousand seven hundred and forty dollars, the income from which is increased by gifts, and by special appropriations of the Trustees.

Students have direct access to all books. They may draw three volumes at a time, to be retained, if desired, for two weeks, with the privilege of one renewal. Abundant facilities are afforded for reading, study, and writing during library hours.

The library is open every week-day during the entire year. From September to Thanksgiving, and from Easter to Commencement, the hours are from 8 A. M. to 12 M., from 1 P. M. to 6 P. M., and from 7.30 P. M. to 10 P. M. Between Thanksgiving and Easter the hours are from 8.30 A. M. to 12.30 P. M., 1.30 P. M. to 6 P. M., and 7.30 P. M. to 10 P. M. On Sundays during the college year the library is open, for reading and reference only, from 2 P. M. to 5.25 P. M. In vacation the hours are from 10.30 A. M. to 12.30 P. M., on week-days.

Senior elective course; prerequisite, *Biology 3-4*.
Three exercises a week, of two hours each, through the year.
Fee, \$10.00.

Professor KELLOGG.

CHEMISTRY

Professor LEVERETT MEARS, Assistant Professor BRAINERD MEARS,
and Mr. BAUERLE.

CHEMISTRY 1-2. *General Chemistry and Qualitative Analysis.*

Chemistry 1. General Chemistry. The principles of chemistry are studied in connection with the non-metals and their compounds. This course is given by experimental lectures, supplemented by recitations and practical work in the laboratory.

Fee, \$3.00.

Four hours a week during the first semester.

Chemistry 2. Metallic Chemistry and Qualitative Analysis. A course of lectures is given on the occurrence, properties, and uses of the metals and their compounds.

Most of the time is devoted to qualitative analysis in the laboratory. This work includes the reactions of the principal bases and acids, their detection and separation. About 100 solutions and 100 solid substances, including about 50 minerals, are analyzed during the course. This course is a continuation of *Chemistry 1*.

Fee, \$10.00 and breakage.

Four periods a week, of two hours each, during the second semester.

Sophomore elective course.

CHEMISTRY 1-BIOLOGY 2. *Chemistry 1* and *Biology 2* may be taken together as constituting a Sophomore year-course. See *Biology 2*.

CHEMISTRY 3-4. *Organic Chemistry.*

Chemistry 3. Organic Chemistry. Lectures on the compounds of carbon, including the history of chemistry and its development to the present time.

This course completes the work begun in *Chemistry 1* and continued in *Chemistry 2*.

Chemistry 4. Advanced Organic Chemistry. This course is a continuation of the work begun in *Chemistry 3*. The principles

of organic chemistry are applied to the preparation and analysis of organic compounds in the laboratory with a discussion of the reactions involved. Cohen's book on organic preparations is used.

Junior elective course; prerequisite, *Chemistry 1-2*.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

CHEMISTRY 5. *Quantitative Analysis.* This course embraces the quantitative determination and separation of the principal bases and acids. Both gravimetric and volumetric methods are employed.

Senior elective course; prerequisite, *Chemistry 3-4*.

Three exercises a week, of two hours each, during the first semester.

Fee, \$10.00 and breakage.

Professor LEVERETT MEARS and

Assistant Professor BRAINERD MEARS.

CHEMISTRY 6. *Physical and Advanced Inorganic Chemistry.* This course consists of lectures on the modern theories of physical chemistry together with experimental work in the laboratory. A course is also given in the preparation of inorganic compounds with a discussion of the reactions involved.

For those who prefer it, a parallel course in physiological chemistry may be offered.

Senior elective course; prerequisite, *Chemistry 3-4*.

Three periods a week, of two hours each, during the second semester.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

GEOLOGY AND MINERALOGY

Professor CLELAND and Mr. DAKE.

GEOLOGY 1-2. *General Geology.* The purpose of the course in general geology is to give the student such a knowledge of the principles of geology that he may be able to understand what he sees of the earth's surface and to know what force or forces have produced this feature of the landscape and what that feature. A study is also made of the forces themselves, such as, for example, glaciers, volcanoes, earthquakes, and erosion. Some time is spent on the life of the past, not only in a description of the animals that lived

in the various periods of the earth's history but also of the changes that took place in their structure and habits, and, as far as possible, of the causes that produced these changes.

Geology 1. During the first semester that portion of the subject included in (a) *Dynamical Geology*, which deals with the forces that have shaped, and are now shaping the earth's surface, such as weathering and erosion, glaciers, volcanoes, earthquakes, etc., is considered.

(b) *Structural Geology* (with the exception of ore deposits, which will be considered in the second semester). In this division of the subject the structure of the earth's crust and the more important rocks and minerals of which it is composed are studied.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Geology 2. In the second semester the origin and occurrence of ores are first studied. This is followed by the major work of the semester, the study of evolutionary geology. The animals of the past, as shown by their fossil remains, are discussed particularly with regard to their bearing upon the theory of evolution. The fossils in the collections, and a number of casts, together with a large collection of lantern slides of restorations, are used in illustration.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Junior elective course; prerequisite, *Chemistry 1-2* or *Chemistry 1-Biology 2*.

Three hours a week through the year.

Geology 3. Advanced Geology. Beginning with a more detailed study of those subjects which are essential to the understanding of economic geology, the aim of the course is to afford the student a practical knowledge of the mineral products of the United States, such as coal, gypsum, salt, iron, lead, copper, and gold. Special attention is paid to the origin of the various deposits studied, with particular reference to the general principles governing the deposition and occurrence of each economic product discussed. Each student is required to present a typewritten report, as the result of his own observation of some local mine, quarry or other deposit of economic importance.

Senior elective course; prerequisite, *Geology 1-2*.

Three hours a week during the first semester.

MR. DAKE.

GEOLOGY 4. *Mineralogy.* The purpose of this course is to give the student the ability to determine the commoner minerals by tests that can be used in the field or with chemicals that can readily be purchased. To accomplish this object, attention is given to the identification of minerals by their physical properties as well as by blowpipe and chemical tests. A brief course in crystallography is given throughout the semester, accompanying the identification of the minerals.

This course is designed for students who plan to take advanced work in chemistry, geology, or mining.

Moses and Parson's *Mineralogy and Blow-pipe Analysis* is used. Senior elective course; prerequisite, *Geology 1-2*.

Three exercises a week during the second semester.

Fee, \$5.00.

MATHEMATICS

Professor FERRY, Associate Professor HARDY, Assistant Professor SHEPARD, Dr. AGARD, and Mr. BOTSFORD.

MATHEMATICS 1-2. *Algebra, Solid Geometry, Plane Trigonometry, and Surveying.*

Advanced Algebra. Binomial theorem, logarithms, permutations, combinations, method of undetermined coefficients, determinants, theory of equations, etc. Rietz and Crathorne's *College Algebra* is used as a text-book.

Solid Geometry. Books VI, VII, and VIII of Wentworth's *New Plane and Solid Geometry*, together with original propositions and numerical problems.

Plane Trigonometry. The trigonometric functions, trigonometric analysis, solutions of right and oblique triangles, etc.

Field Work in Surveying. The practical use of instruments, including determination of heights, simple triangulation, measurement of areas, and leveling. This portion of the course is optional.

Freshman required course.

Four hours a week through the year.

Associate Professor HARDY, Assistant Professor SHEPARD,
Dr. AGARD and Mr. BOTSFORD.

MATHEMATICS 3-4. *Analytic Geometry and Differential Calculus.*

Mathematics 3. Analytic Geometry. Plane analytic geometry,—the straight line, circle, parabola, ellipse, and hyperbola,—with an

introduction to analytic geometry of three dimensions. Wentworth's *Analytic Geometry* is the text-book used.

The first semester.

Professor FERRY and Assistant Professor SHEPARD.

Mathematics 4. Differential Calculus. Methods of differentiation, expansion of functions into series, indeterminate forms, the simpler applications to mechanics and to the theory of plane curves, etc. Granville's *Calculus* is the text-book used.

The second semester.

Assistant Professor SHEPARD.

Sophomore elective course, required of Freshmen in Admission Groups IV and V; prerequisite, *Mathematics 1-2*.

Four hours a week through the year.

MATHEMATICS 5-6. *Differential and Integral Calculus.*

Mathematics 5. Integral Calculus. Derivation and application of the fundamental formulas of integration; applications of the integral calculus to the determination of lengths of curves, areas and volumes, mean values, moments of inertia, etc., based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The first semester.

Mathematics 6. Differential and Integral Calculus. A continuation of the work of the first semester. Numerous applications of the differential and integral calculus are considered. The work is based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The second semester.

Junior elective course, open also to Sophomores in Admission Groups IV and V; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Associate Professor HARDY.

MATHEMATICS 7-8. *Descriptive Geometry.* Problems of the straight line and plane, curved surfaces, intersections and development of surfaces, simple warped surfaces. Elements of shades and shadows. Anthony and Ashley's *Descriptive Geometry* and Fishleigh's *Problems* are used as text-books.

Junior elective course; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Assistant Professor SHEPARD.

MATHEMATICS 9. *Differential Equations.* Methods of solution of the simpler forms of differential equations, applications to many problems of mathematical physics, etc. The course is based on Cohen's *Differential Equations*.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the first semester.

Dr. AGARD.

MATHEMATICS 10. *Modern Methods in Analytic Geometry.* Abridged notation, line coördinates, harmonic divisions, projection, etc., with many applications. Lectures, with references to Salmon's *Conic Sections* and other works.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the second semester.

Professor FERRY.

PHYSICS

Professor McELFRESH and Mr. SHRADER.

PHYSICS 1-2. *General Physics.* This course deals with the elementary facts and principles of physics and with the applications of physical laws to the experiences and phenomena of daily life. It includes elementary mechanics, sound, heat, light, magnetism, and electricity.

Sophomore elective course.

Four exercises a week through the year; these are lectures and recitations (three hours a week) and laboratory work (one two-hour exercise a week). For laboratory work the class is divided into small divisions; two-hour periods are assigned for this work to fit individual schedules.

Fee, \$5.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 3-4. *Experimental Physics.* Mechanics, sound, heat, light, magnetism, and electricity. This course consists of a series of physical measurements in the laboratory, accompanied by lectures. The lectures deal with the methods and principles involved in the laboratory work and also discuss certain physical problems which do not readily lend themselves to laboratory experimentation. In the laboratory work high-grade instruments of precision are employed and the course is expected to give some skill in

accurate measurement. The primary object of the laboratory work is to enable the student to familiarize himself with physical phenomena by direct personal observation.

Junior elective course; prerequisite, *Physics 1-2*.

Three exercises a week through the year; lectures and recitations (one hour a week), and laboratory work (two two-hour periods a week).

Fee, \$10.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 5-6. *Electrical Measurements and Practical Applications of Electricity*. This course consists of lectures and laboratory work and includes a study of the magnetic properties of iron and steel, of direct and alternating current phenomena, and of their practical illustration in dynamo-electric machinery.

Senior elective course; prerequisite, *Physics 3-4*.

Three exercises a week through the year; lectures and recitations (two hours a week), and laboratory work (one two-hour period a week).

Fee, \$10.00.

Mr. SHRADER.

PHYSICS 7. *Experimental Mechanics*. The general principles of mechanics of solids; statics and kinetics of rigid bodies. Lectures, problems, and laboratory work.

Senior elective course; prerequisite, *Mathematics 3-4* and *Physics 1-2*.

Three exercises a week during the first semester.

Professor McELFRESH.

PHYSICS 8. *Experimental Mechanics*. A continuation of *Physics 7*. Elasticity of solids, liquids, and gases. Statics and kinetics of liquids and gases.

Senior elective course; prerequisite, *Physics 7*.

Three exercises a week during the second semester.

Professor McELFRESH.

PHYSIOLOGY AND HYGIENE

Professor HOWARD.

HYGIENE. A series of lectures and recitations on the preservation of health. The lectures are designed to acquaint the student with the causes of disease, to point out the conditions of healthy

SCIENCES

ASTRONOMY

Professor MILHAM.

ASTRONOMY 1-2. This year course is divided into two parts, descriptive astronomy and an introduction to spherical and practical astronomy. In the descriptive astronomy a text-book, Young's *Manual of Astronomy*, is used as the basis of instruction. Numerous supplementary lectures are given and the course is illustrated by charts and photographs. Such topics as the time service of the country, the origin of our calendar, the presence of an atmosphere in the case of the moon and the planets, and the cosmogony, are treated at length. During the second part of the course lectures on modern observatories, their location, equipment, and work, are given. Experimental demonstration and practical exercises in the observatory constitute a large part of the instruction during the last part of the second semester.

Junior elective course; prerequisite, *Physics* 1-2.

Three hours a week through the year.

ASTRONOMY 3. *Theoretical Astronomy*. The mathematical side of astronomy is here considered. Elliptic motion, place in orbit, place in space, and the computation of orbits are treated.

Senior elective course; prerequisite, *Astronomy* 1-2 and *Mathematics* 5-6.

Three hours a week during the first semester.

ASTRONOMY 4. *Spherical and Practical Astronomy*. This course consists of spherical trigonometry and its application to astronomy and the use of astronomical instruments in the determination of latitude, longitude, and time.

Senior elective course; prerequisite, *Astronomy* 1-2 and *Mathematics* 3-4.

Three hours a week during the second semester.

BIOLOGY

Professor CLARKE and Professor KELLOGG.

BIOLOGY 2. *A study of living matter and of life.*

Text-book, lectures, oral and written recitations, laboratory exercises.

Sophomore elective course; prerequisite, *Chemistry 1*.

Four hours a week during the second semester.

Fee, \$2.00.

Professor CLARKE.

Biology 2 is to be taken only as the second semester of the Sophomore year-course, *Chemistry 1-Biology 2*. See *Chemistry 1*.

BIOLOGY 3-4. The year's work includes two subjects:

(a) *Zoölogy of the Invertebrata*. This part of the course extends from September to about the last of March. Instruction is by means of lectures, recitations, and laboratory work. The structure and functions of several single-celled organisms are studied in the laboratory by means of the microscope. Among the many-celled forms examined are sponges, fresh-water hydras, marine hydroids, the star-fish, sea-urchins, worms, crayfish, grasshopper, fresh-water and marine bivalves, and the squid. The object of this work is chiefly to demonstrate the meanings of homologies and adaptations, and to afford an appreciation of the value of the data employed in inductions considered later in the course. Laboratory work is recorded by each student in simple outline drawings.

(b) *Theories of Biology*. The remainder of the year is given to a series of lectures, with recitations, on the general problems of biology. Laboratory work in (a) is continued during this period.

The course considers the views of the early Transmutationists, of Lamarck, Erasmus Darwin, and others, and enters fully into a discussion of the theory of natural selection of Darwin and Wallace. Attention is given to early criticisms of the theory, and more particularly to recent observations that tend to limit it as a universal explanation of the structural and functional peculiarities of organisms.

Among the subjects discussed are the meaning of the term species, the multiplication of organisms, and the struggle for existence, variation among individuals, the meaning of color and peculiar structural modifications among animals and plants, heredity, natural selection and the development of the mental faculties, natural selection and morals, recent theories accounting for the origin of species, and the influence of the scientific method on modern thought.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

BIOLOGY 5-6. *Botany, including the Principles of Forestry and Evolution of Plants.*

Biology 5. The work in the first part of the course deals with the mechanism of one of the most highly organized plants. In connection with this, Steven's *Plant Anatomy* is used as a text-book. The second part of the course treats of the life-history of such a plant. This is followed by a study of plant physiology, using Coulter, Barnes, and Cowles's *Text-book of Botany*. A study of the principles of forestry with the use of Greene's text-book completes the course.

Lectures, laboratory, text-books, and field work with our native trees.

Biology 6. The Evolution of Plants. A continuation of *Botany 1*. Types of all the plant groups from the simplest to the most highly organized are studied, their structure and life history receiving especial attention. This is made the basis for a consideration of the process of evolution in the plant world, and will include such general subjects as the origin of sex, the origin of the seed plants and its significance to man, and the origin of the coal beds. Lectures, laboratory work, and occasional field work.

Text-book, Strasburger's *A Text-book of Botany*.

Fee, \$6.00.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week through the year.

Professor CLARKE

BIOLOGY 7-8. A continuation of *Biology 3-4*.

(a) *Zoölogy of the Chordata*. As in *Zoölogy of the Invertebrata*, instruction is by means of lectures, recitations, and laboratory work. The fishes, amphibia, reptiles, birds, and mammals are studied comparatively by means of dissections in the laboratory.

(b) *Embryology*. The second semester is given to a study of the development of the starfish, worm, frog, chick, and mammal. In the first three forms special attention is given to the early stages which follow fertilization. The work on the chick is outlined by a text-book, and followed in the laboratory by means of preparations, some of which are made by the student. It covers the development from the beginning of incubation to a stage in which the more important organs of the body have appeared. Mammalian development is compared with that of the chick, which it closely resembles, but is studied in the laboratory only by means of models and demonstration preparations.

Senior elective course; prerequisite, *Biology* 3-4.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

CHEMISTRY

Professor LEVERETT MEARS, Assistant Professor BRAINERD MEARS,
and Mr. BAUERLE.

CHEMISTRY 1-2. *General Chemistry and Qualitative Analysis.*

Chemistry 1. General Chemistry. The principles of chemistry are studied in connection with the non-metals and their compounds. This course is given by experimental lectures, supplemented by recitations and practical work in the laboratory.

Fee, \$3.00.

Four hours a week during the first semester.

Chemistry 2. Metallic Chemistry and Qualitative Analysis. A course of lectures is given on the occurrence, properties, and uses of the metals and their compounds.

Most of the time is devoted to qualitative analysis in the laboratory. This work includes the reactions of the principal bases and acids, their detection and separation. About 100 solutions and 100 solid substances, including about 50 minerals, are analyzed during the course. This course is a continuation of *Chemistry 1*.

Fee, \$10.00 and breakage.

Four periods a week, of two hours each, during the second semester.

Sophomore elective course.

CHEMISTRY 1-BIOLOGY 2. *Chemistry 1* and *Biology 2* may be taken together as constituting a Sophomore year-course. See *Biology 2*.

CHEMISTRY 3-4. *Organic Chemistry.*

Chemistry 3. Organic Chemistry. Lectures on the compounds of carbon, including the history of chemistry and its development to the present time.

This course completes the work begun in *Chemistry 1* and continued in *Chemistry 2*.

Chemistry 4. Advanced Organic Chemistry. This course is a continuation of the work begun in *Chemistry 3*. The principles

On the second Saturday in October a number not exceeding one twelfth of the whole number of the Senior class is elected to membership. Also, after the final examinations of the Senior year, a twelfth of the remaining members of the Senior class is elected to membership. Almost without exception, the men chosen are those having the highest standing in the class.

HONORS

At the end of each college year the Faculty will award honors for high scholarship. These honors will be of two grades; viz., "honors" and "highest honors." The names of the recipients will be read at the Commencement exercises and printed in a pamphlet, which will be sent to the recipients, their parents, the Trustees, and the Faculty; and the names of the recipients will also be printed in the next annual catalogue. The names of Seniors taking honors may also be printed on the Commencement program.

The award will be made in accordance with the following conditions:

FRESHMAN, SOPHOMORE, JUNIOR, AND SENIOR CLASS HONORS

"Class honors" thus designated will be awarded at the end of each year to the students in each class who shall have attained the grade A in courses amounting to at least twenty-four semester-hours in that year, and shall have fallen below the grade B in none; and "highest class honors" will be awarded to those students in each class who shall have attained the grade A in all their courses. provided the same amount to at least thirty semester-hours.

FINAL HONORS

A *General Final Honors*

"General final honors" will be awarded to those students who shall have attained the grade A in at least half the hours of their entire course, and fallen below the grade B

in the various periods of the earth's history but also of the changes that took place in their structure and habits, and, as far as possible, of the causes that produced these changes.

Geology 1. During the first semester that portion of the subject included in (a) *Dynamical Geology*, which deals with the forces that have shaped, and are now shaping the earth's surface, such as weathering and erosion, glaciers, volcanoes, earthquakes, etc., is considered.

(b) *Structural Geology* (with the exception of ore deposits, which will be considered in the second semester). In this division of the subject the structure of the earth's crust and the more important rocks and minerals of which it is composed are studied.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Geology 2. In the second semester the origin and occurrence of ores are first studied. This is followed by the major work of the semester, the study of evolutionary geology. The animals of the past, as shown by their fossil remains, are discussed particularly with regard to their bearing upon the theory of evolution. The fossils in the collections, and a number of casts, together with a large collection of lantern slides of restorations, are used in illustration.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Junior elective course; prerequisite, *Chemistry 1-2* or *Chemistry 1-Biology 2*.

Three hours a week through the year.

GEOLOGY 3. Advanced Geology. Beginning with a more detailed study of those subjects which are essential to the understanding of economic geology, the aim of the course is to afford the student a practical knowledge of the mineral products of the United States, such as coal, gypsum, salt, iron, lead, copper, and gold. Special attention is paid to the origin of the various deposits studied, with particular reference to the general principles governing the deposition and occurrence of each economic product discussed. Each student is required to present a typewritten report, as the result of his own observation of some local mine, quarry or other deposit of economic importance.

Senior elective course; prerequisite, *Geology 1-2*.

Three hours a week during the first semester.

MR. DAKE.

GEOLOGY 4. Mineralogy. The purpose of this course is to give the student the ability to determine the commoner minerals by tests that can be used in the field or with chemicals that can readily be purchased. To accomplish this object, attention is given to the identification of minerals by their physical properties as well as by blowpipe and chemical tests. A brief course in crystallography is given throughout the semester, accompanying the identification of the minerals.

This course is designed for students who plan to take advanced work in chemistry, geology, or mining.

Moses and Parson's *Mineralogy and Blow-pipe Analysis* is used.

Senior elective course; prerequisite, *Geology 1-2*.

Three exercises a week during the second semester.

Fee, \$5.00.

MATHEMATICS

Professor FERRY, Associate Professor HARDY, Assistant Professor SHEPARD, Dr. AGARD, and Mr. BOTSFORD.

MATHEMATICS 1-2. Algebra, Solid Geometry, Plane Trigonometry, and Surveying.

Advanced Algebra. Binomial theorem, logarithms, permutations, combinations, method of undetermined coefficients, determinants, theory of equations, etc. Rietz and Crathorne's *College Algebra* is used as a text-book.

Solid Geometry. Books VI, VII, and VIII of Wentworth's *New Plane and Solid Geometry*, together with original propositions and numerical problems.

Plane Trigonometry. The trigonometric functions, trigonometric analysis, solutions of right and oblique triangles, etc.

Field Work in Surveying. The practical use of instruments, including determination of heights, simple triangulation, measurement of areas, and leveling. This portion of the course is optional.

Freshman required course.

Four hours a week through the year.

Associate Professor HARDY, Assistant Professor SHEPARD,
Dr. AGARD and Mr. BOTSFORD.

MATHEMATICS 3-4. Analytic Geometry and Differential Calculus.

Mathematics 3. Analytic Geometry. Plane analytic geometry,—the straight line, circle, parabola, ellipse, and hyperbola,—with an

introduction to analytic geometry of three dimensions. Wentworth's *Analytic Geometry* is the text-book used.

The first semester.

Professor FERRY and Assistant Professor SHEPARD.

Mathematics 4. Differential Calculus. Methods of differentiation, expansion of functions into series, indeterminate forms, the simpler applications to mechanics and to the theory of plane curves, etc. Granville's *Calculus* is the text-book used.

The second semester.

Assistant Professor SHEPARD.

Sophomore elective course, required of Freshmen in Admission Groups IV and V; prerequisite, *Mathematics 1-2*.

Four hours a week through the year.

MATHEMATICS 5-6. *Differential and Integral Calculus.*

Mathematics 5. Integral Calculus. Derivation and application of the fundamental formulas of integration; applications of the integral calculus to the determination of lengths of curves, areas and volumes, mean values, moments of inertia, etc., based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The first semester.

Mathematics 6. Differential and Integral Calculus. A continuation of the work of the first semester. Numerous applications of the differential and integral calculus are considered. The work is based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The second semester.

Junior elective course, open also to Sophomores in Admission Groups IV and V; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Associate Professor HARDY.

MATHEMATICS 7-8. *Descriptive Geometry.* Problems of the straight line and plane, curved surfaces, intersections and development of surfaces, simple warped surfaces. Elements of shades and shadows. Anthony and Ashley's *Descriptive Geometry* and Fishleigh's *Problems* are used as text-books.

Junior elective course; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Assistant Professor SHEPARD.

MATHEMATICS 9. *Differential Equations.* Methods of solution of the simpler forms of differential equations, applications to many problems of mathematical physics, etc. The course is based on Cohen's *Differential Equations*.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the first semester.

Dr. AGARD.

MATHEMATICS 10. *Modern Methods in Analytic Geometry.* Abridged notation, line coördinates, harmonic divisions, projection, etc., with many applications. Lectures, with references to Salmon's *Conic Sections* and other works.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the second semester.

Professor FERRY.

PHYSICS

Professor McELFRESH and Mr. SHRADER.

PHYSICS 1-2. *General Physics.* This course deals with the elementary facts and principles of physics and with the applications of physical laws to the experiences and phenomena of daily life. It includes elementary mechanics, sound, heat, light, magnetism, and electricity.

Sophomore elective course.

Four exercises a week through the year; these are lectures and recitations (three hours a week) and laboratory work (one two-hour exercise a week). For laboratory work the class is divided into small divisions; two-hour periods are assigned for this work to fit individual schedules.

Fee, \$5.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 3-4. *Experimental Physics.* Mechanics, sound, heat, light, magnetism, and electricity. This course consists of a series of physical measurements in the laboratory, accompanied by lectures. The lectures deal with the methods and principles involved in the laboratory work and also discuss certain physical problems which do not readily lend themselves to laboratory experimentation. In the laboratory work high-grade instruments of precision are employed and the course is expected to give some skill in

accurate measurement. The primary object of the laboratory work is to enable the student to familiarize himself with physical phenomena by direct personal observation.

Junior elective course; prerequisite, *Physics* 1-2.

Three exercises a week through the year; lectures and recitations (one hour a week), and laboratory work (two two-hour periods a week).

Fee, \$10.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 5-6. *Electrical Measurements and Practical Applications of Electricity.* This course consists of lectures and laboratory work and includes a study of the magnetic properties of iron and steel, of direct and alternating current phenomena, and of their practical illustration in dynamo-electric machinery.

Senior elective course; prerequisite, *Physics* 3-4.

Three exercises a week through the year; lectures and recitations (two hours a week), and laboratory work (one two-hour period a week).

Fee, \$10.00.

Mr. SHRADER.

PHYSICS 7. *Experimental Mechanics.* The general principles of mechanics of solids; statics and kinetics of rigid bodies. Lectures, problems, and laboratory work.

Senior elective course; prerequisite, *Mathematics* 3-4 and *Physics* 1-2.

Three exercises a week during the first semester.

Professor McELFRESH.

PHYSICS 8. *Experimental Mechanics.* A continuation of *Physics* 7. Elasticity of solids, liquids, and gases. Statics and kinetics of liquids and gases.

Senior elective course; prerequisite, *Physics* 7.

Three exercises a week during the second semester.

Professor McELFRESH.

PHYSIOLOGY AND HYGIENE

Professor HOWARD.

HYGIENE. A series of lectures and recitations on the preservation of health. The lectures are designed to acquaint the student with the causes of disease, to point out the conditions of healthy

living, and to inculcate those habits that promote physical efficiency. In several lectures attention is given to the problems of public health, especially those of safeguarding the food-supply and stamping out communicable disease.

Freshman required course.

One hour a week during the first semester.

Shortly after the opening of college in the fall, each new student is given a physical examination, the objects of which are to discover any existing defects of the heart, lungs, eyes or muscular development, and to prescribe proper measures for their correction. Particular attention is given to the fitness of candidates for the athletic teams.

PHYSIOLOGY 1. An elementary study of the mechanism of life. Attention is centered chiefly on the structure and function of the human body, but the facts of general physiology are constantly employed to throw light on the special problems of human physiology. The physical and chemical features of the material basis of life are discussed first. Following this the physiology of the cell is briefly surveyed. The remainder and larger part of the course is a study of the income of material and energy to the body, comprising the subjects of alimentation, respiration, circulation, and metabolism. As far as time and the nature of the subject permit, the facts of physiology are demonstrated to the class, and the discussions are based as far as possible on these observed phenomena. Classroom instruction is supplemented by reading of references in the manuals and periodicals of the science.

Senior elective course; prerequisite, *Biology* 3-4 or *Biology* 5-6.

Three hours a week during the first semester.

PHYSIOLOGY 2. This course continues the study of physiology on lines similar to those followed in *Physiology* 1. The means by which the body is adapted to its environment is the main topic. This comprises a study of the neuro-muscular mechanism, the central nervous system, and the organs of sensation.

Senior elective course; prerequisite, *Physiology* 1.

Three hours a week during the second semester.

PHYSICAL TRAINING

Mr. SEELEY.

Exercises consisting of marching, calisthenics, and light gymnastics with wands, clubs, chest-weights, and dumb-bells.

The first six weeks are given up to outdoor work on Weston Field.

Freshman required course.

Three forty-five minute periods a week until Easter.

[In connection with this work a course of lectures on Hygiene is given in the first semester by Professor Howard. See the announcement of Physiology and Hygiene.]

Elective work in the gymnasium is offered to other classes.

SCIENCES

ASTRONOMY

Professor MILHAM.

ASTRONOMY 1-2. This year course is divided into two parts, descriptive astronomy and an introduction to spherical and practical astronomy. In the descriptive astronomy a text-book, Young's *Manual of Astronomy*, is used as the basis of instruction. Numerous supplementary lectures are given and the course is illustrated by charts and photographs. Such topics as the time service of the country, the origin of our calendar, the presence of an atmosphere in the case of the moon and the planets, and the cosmogony, are treated at length. During the second part of the course lectures on modern observatories, their location, equipment, and work, are given. Experimental demonstration and practical exercises in the observatory constitute a large part of the instruction during the last part of the second semester.

Junior elective course; prerequisite, *Physics 1-2*.

Three hours a week through the year.

ASTRONOMY 3. Theoretical Astronomy. The mathematical side of astronomy is here considered. Elliptic motion, place in orbit, place in space, and the computation of orbits are treated.

Senior elective course; prerequisite, *Astronomy 1-2* and *Mathematics 5-6*.

Three hours a week during the first semester.

ASTRONOMY 4. Spherical and Practical Astronomy. This course consists of spherical trigonometry and its application to astronomy and the use of astronomical instruments in the determination of latitude, longitude, and time.

Senior elective course; prerequisite, *Astronomy 1-2* and *Mathematics 3-4*.

Three hours a week during the second semester.

BIOLOGY

Professor CLARKE and Professor KELLOGG.

BIOLOGY 2. A study of living matter and of life.

Text-book, lectures, oral and written recitations, laboratory exercises.

Sophomore elective course; prerequisite, *Chemistry 1*.

Four hours a week during the second semester.

Fee, \$2.00.

Professor CLARKE.

Biology 2 is to be taken only as the second semester of the Sophomore year-course, *Chemistry 1-Biology 2*. See *Chemistry 1*.

BIOLOGY 3-4. The year's work includes two subjects:

(a) *Zoölogy of the Invertebrata*. This part of the course extends from September to about the last of March. Instruction is by means of lectures, recitations, and laboratory work. The structure and functions of several single-celled organisms are studied in the laboratory by means of the microscope. Among the many-celled forms examined are sponges, fresh-water hydras, marine hydroids, the star-fish, sea-urchins, worms, crayfish, grasshopper, fresh-water and marine bivalves, and the squid. The object of this work is chiefly to demonstrate the meanings of homologies and adaptations, and to afford an appreciation of the value of the data employed in inductions considered later in the course. Laboratory work is recorded by each student in simple outline drawings.

(b) *Theories of Biology*. The remainder of the year is given to a series of lectures, with recitations, on the general problems of biology. Laboratory work in (a) is continued during this period.

The course considers the views of the early Transmutationists, of Lamarck, Erasmus Darwin, and others, and enters fully into a discussion of the theory of natural selection of Darwin and Wallace. Attention is given to early criticisms of the theory, and more particularly to recent observations that tend to limit it as a universal explanation of the structural and functional peculiarities of organisms.

Among the subjects discussed are the meaning of the term species, the multiplication of organisms, and the struggle for existence, variation among individuals, the meaning of color and peculiar structural modifications among animals and plants, heredity, natural selection and the development of the mental faculties, natural selection and morals, recent theories accounting for the origin of species, and the influence of the scientific method on modern thought.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

BIOLOGY 5-6. *Botany, including the Principles of Forestry and Evolution of Plants.*

Biology 5. The work in the first part of the course deals with the mechanism of one of the most highly organized plants. In connection with this, Steven's *Plant Anatomy* is used as a text-book. The second part of the course treats of the life-history of such a plant. This is followed by a study of plant physiology, using Coulter, Barnes, and Cowles's *Text-book of Botany*. A study of the principles of forestry with the use of Greene's text-book completes the course.

Lectures, laboratory, text-books, and field work with our native trees.

Biology 6. The Evolution of Plants. A continuation of *Botany 1*. Types of all the plant groups from the simplest to the most highly organized are studied, their structure and life history receiving especial attention. This is made the basis for a consideration of the process of evolution in the plant world, and will include such general subjects as the origin of sex, the origin of the seed plants and its significance to man, and the origin of the coal beds. Lectures, laboratory work, and occasional field work.

Text-book, Strasburger's *A Text-book of Botany*.

Fee, \$6.00.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week through the year.

Professor CLARKE.

BIOLOGY 7-8. A continuation of *Biology 3-4*.

(a) *Zoölogy of the Chordata*. As in *Zoölogy of the Invertebrata*, instruction is by means of lectures, recitations, and laboratory work. The fishes, amphibia, reptiles, birds, and mammals are studied comparatively by means of dissections in the laboratory.

(b) *Embryology*. The second semester is given to a study of the development of the starfish, worm, frog, chick, and mammal. In the first three forms special attention is given to the early stages which follow fertilization. The work on the chick is outlined by a text-book, and followed in the laboratory by means of preparations, some of which are made by the student. It covers the development from the beginning of incubation to a stage in which the more important organs of the body have appeared. Mammalian development is compared with that of the chick, which it closely resembles, but is studied in the laboratory only by means of models and demonstration preparations.

Senior elective course; prerequisite, *Biology* 3-4.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

CHEMISTRY

Professor LEVERETT MEARS, Assistant Professor BRAINERD MEARS,
and Mr. BAUERLE.

CHEMISTRY 1-2. *General Chemistry and Qualitative Analysis.*

Chemistry 1. General Chemistry. The principles of chemistry are studied in connection with the non-metals and their compounds. This course is given by experimental lectures, supplemented by recitations and practical work in the laboratory.

Fee, \$3.00.

Four hours a week during the first semester.

Chemistry 2. Metallic Chemistry and Qualitative Analysis. A course of lectures is given on the occurrence, properties, and uses of the metals and their compounds.

Most of the time is devoted to qualitative analysis in the laboratory. This work includes the reactions of the principal bases and acids, their detection and separation. About 100 solutions and 100 solid substances, including about 50 minerals, are analyzed during the course. This course is a continuation of *Chemistry 1*.

Fee, \$10.00 and breakage.

Four periods a week, of two hours each, during the second semester.

Sophomore elective course.

CHEMISTRY 1-BIOLOGY 2. *Chemistry 1* and *Biology 2* may be taken together as constituting a Sophomore year-course. See *Biology 2*.

CHEMISTRY 3-4. *Organic Chemistry.*

Chemistry 3. Organic Chemistry. Lectures on the compounds of carbon, including the history of chemistry and its development to the present time.

This course completes the work begun in *Chemistry 1* and continued in *Chemistry 2*.

Chemistry 4. Advanced Organic Chemistry. This course is a continuation of the work begun in *Chemistry 3*. The principles

PRIZES AWARDED AT COMMENCEMENT, 1912
THE BENEDICT PRIZES

In Latin

FIRST PRIZE—Robert Chesley Brewster.....Class of 1914
SECOND PRIZE—Arthur Newton Pack.....“ “ “
HONORABLE MENTION—Wynne Chard Stevens.....“ “ 1912

In Greek

FIRST AND SECOND PRIZES—Equally divided between
Edwin Holmes Adriance and Richard Ellsworth
WeeksClass of 1914
HONORABLE MENTION—Richmond Walker.....“ “ “

In French

FIRST PRIZE—John Richardson Miller.....Class of 1913
SECOND PRIZE—Newman Barnes Abercrombie.....“ “ “

In German

FIRST PRIZE—Thomas Ray Mather.....Class of 1913
SECOND PRIZE—William Ozmun Wyckoff.....“ “ 1914

In Mathematics

FIRST PRIZE—William Leonard Crum.....Class of 1914
SECOND PRIZE—John Dickinson Stevens.....“ “ “
HONORABLE MENTION—Samuel Scriven Evans, Jr.....“ “ “

In Natural History

FIRST PRIZE—Edward Augustus Lane.....Class of 1912
SECOND PRIZE—Manning Cromwell Field.....“ “ “

In History

FIRST PRIZE—Thomas Worth Doan.....Class of 1912
SECOND PRIZE—Sidney Leavitt Pressey.....“ “ “
HONORABLE MENTION—Francis Cogswell Wickes.....“ “ “

PRIZE FOR PRIZES

Charles Francis Hawkins.....Class of 1912

in the various periods of the earth's history but also of the changes that took place in their structure and habits, and, as far as possible, of the causes that produced these changes.

Geology 1. During the first semester that portion of the subject included in (a) *Dynamical Geology*, which deals with the forces that have shaped, and are now shaping the earth's surface, such as weathering and erosion, glaciers, volcanoes, earthquakes, etc., is considered.

(b) *Structural Geology* (with the exception of ore deposits, which will be considered in the second semester). In this division of the subject the structure of the earth's crust and the more important rocks and minerals of which it is composed are studied.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Geology 2. In the second semester the origin and occurrence of ores are first studied. This is followed by the major work of the semester, the study of evolutionary geology. The animals of the past, as shown by their fossil remains, are discussed particularly with regard to their bearing upon the theory of evolution. The fossils in the collections, and a number of casts, together with a large collection of lantern slides of restorations, are used in illustration.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Junior elective course; prerequisite, *Chemistry 1-2* or *Chemistry 1-Biology 2*.

Three hours a week through the year.

GEOLOGY 3. Advanced Geology. Beginning with a more detailed study of those subjects which are essential to the understanding of economic geology, the aim of the course is to afford the student a practical knowledge of the mineral products of the United States, such as coal, gypsum, salt, iron, lead, copper, and gold. Special attention is paid to the origin of the various deposits studied, with particular reference to the general principles governing the deposition and occurrence of each economic product discussed. Each student is required to present a typewritten report, as the result of his own observation of some local mine, quarry or other deposit of economic importance.

Senior elective course; prerequisite, *Geology 1-2*.

Three hours a week during the first semester.

MR. DAKE.

GEOLOGY 4. *Mineralogy.* The purpose of this course is to give the student the ability to determine the commoner minerals by tests that can be used in the field or with chemicals that can readily be purchased. To accomplish this object, attention is given to the identification of minerals by their physical properties as well as by blowpipe and chemical tests. A brief course in crystallography is given throughout the semester, accompanying the identification of the minerals.

This course is designed for students who plan to take advanced work in chemistry, geology, or mining.

Moses and Parson's *Mineralogy and Blow-pipe Analysis* is used.

Senior elective course; prerequisite, *Geology 1-2*.

Three exercises a week during the second semester.

Fee, \$5.00.

MATHEMATICS

Professor FERRY, Associate Professor HARDY, Assistant Professor SHEPARD, Dr. AGARD, and Mr. BOTSFORD.

MATHEMATICS 1-2. *Algebra, Solid Geometry, Plane Trigonometry, and Surveying.*

Advanced Algebra. Binomial theorem, logarithms, permutations, combinations, method of undetermined coefficients, determinants, theory of equations, etc. Rietz and Crathorne's *College Algebra* is used as a text-book.

Solid Geometry. Books VI, VII, and VIII of Wentworth's *New Plane and Solid Geometry*, together with original propositions and numerical problems.

Plane Trigonometry. The trigonometric functions, trigonometric analysis, solutions of right and oblique triangles, etc.

Field Work in Surveying. The practical use of instruments, including determination of heights, simple triangulation, measurement of areas, and leveling. This portion of the course is optional.

Freshman required course.

Four hours a week through the year.

Associate Professor HARDY, Assistant Professor SHEPARD,
Dr. AGARD and Mr. BOTSFORD.

MATHEMATICS 3-4. *Analytic Geometry and Differential Calculus.*

Mathematics 3. Analytic Geometry. Plane analytic geometry,—the straight line, circle, parabola, ellipse, and hyperbola,—with an

introduction to analytic geometry of three dimensions. Wentworth's *Analytic Geometry* is the text-book used.

The first semester.

Professor FERRY and Assistant Professor SHEPARD.

Mathematics 4. Differential Calculus. Methods of differentiation, expansion of functions into series, indeterminate forms, the simpler applications to mechanics and to the theory of plane curves, etc. Granville's *Calculus* is the text-book used.

The second semester.

Assistant Professor SHEPARD.

Sophomore elective course, required of Freshmen in Admission Groups IV and V; prerequisite, *Mathematics 1-2*.

Four hours a week through the year.

MATHEMATICS 5-6. *Differential and Integral Calculus.*

Mathematics 5. Integral Calculus. Derivation and application of the fundamental formulas of integration; applications of the integral calculus to the determination of lengths of curves, areas and volumes, mean values, moments of inertia, etc., based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The first semester.

Mathematics 6. Differential and Integral Calculus. A continuation of the work of the first semester. Numerous applications of the differential and integral calculus are considered. The work is based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The second semester.

Junior elective course, open also to Sophomores in Admission Groups IV and V; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Associate Professor HARDY.

MATHEMATICS 7-8. *Descriptive Geometry.* Problems of the straight line and plane, curved surfaces, intersections and development of surfaces, simple warped surfaces. Elements of shades and shadows. Anthony and Ashley's *Descriptive Geometry* and Fishleigh's *Problems* are used as text-books.

Junior elective course; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Assistant Professor SHEPARD.

MATHEMATICS 9. *Differential Equations.* Methods of solution of the simpler forms of differential equations, applications to many problems of mathematical physics, etc. The course is based on Cohen's *Differential Equations*.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the first semester.

Dr. AGARD.

MATHEMATICS 10. *Modern Methods in Analytic Geometry.* Abridged notation, line coördinates, harmonic divisions, projection, etc., with many applications. Lectures, with references to Salmon's *Conic Sections* and other works.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the second semester.

Professor FERRY.

PHYSICS

Professor McELFRESH and Mr. SHRADER.

PHYSICS 1-2. *General Physics.* This course deals with the elementary facts and principles of physics and with the applications of physical laws to the experiences and phenomena of daily life. It includes elementary mechanics, sound, heat, light, magnetism, and electricity.

Sophomore elective course.

Four exercises a week through the year; these are lectures and recitations (three hours a week) and laboratory work (one two-hour exercise a week). For laboratory work the class is divided into small divisions; two-hour periods are assigned for this work to fit individual schedules.

Fee, \$5.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 3-4. *Experimental Physics.* Mechanics, sound, heat, light, magnetism, and electricity. This course consists of a series of physical measurements in the laboratory, accompanied by lectures. The lectures deal with the methods and principles involved in the laboratory work and also discuss certain physical problems which do not readily lend themselves to laboratory experimentation. In the laboratory work high-grade instruments of precision are employed and the course is expected to give some skill in

accurate measurement. The primary object of the laboratory work is to enable the student to familiarize himself with physical phenomena by direct personal observation.

Junior elective course; prerequisite, *Physics 1-2*.

Three exercises a week through the year; lectures and recitations (one hour a week), and laboratory work (two two-hour periods a week).

Fee, \$10.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 5-6. *Electrical Measurements and Practical Applications of Electricity.* This course consists of lectures and laboratory work and includes a study of the magnetic properties of iron and steel, of direct and alternating current phenomena, and of their practical illustration in dynamo-electric machinery.

Senior elective course; prerequisite, *Physics 3-4*.

Three exercises a week through the year; lectures and recitations (two hours a week), and laboratory work (one two-hour period a week).

Fee, \$10.00.

Mr. SHRADER.

PHYSICS 7. *Experimental Mechanics.* The general principles of mechanics of solids; statics and kinetics of rigid bodies. Lectures, problems, and laboratory work.

Senior elective course; prerequisite, *Mathematics 3-4* and *Physics 1-2*.

Three exercises a week during the first semester.

Professor McELFRESH.

PHYSICS 8. *Experimental Mechanics.* A continuation of *Physics 7*. Elasticity of solids, liquids, and gases. Statics and kinetics of liquids and gases.

Senior elective course; prerequisite, *Physics 7*.

Three exercises a week during the second semester.

Professor McELFRESH.

PHYSIOLOGY AND HYGIENE

Professor HOWARD.

HYGIENE. A series of lectures and recitations on the preservation of health. The lectures are designed to acquaint the student with the causes of disease, to point out the conditions of healthy

living, and to inculcate those habits that promote physical efficiency. In several lectures attention is given to the problems of public health, especially those of safeguarding the food-supply and stamping out communicable disease.

Freshman required course.

One hour a week during the first semester.

Shortly after the opening of college in the fall, each new student is given a physical examination, the objects of which are to discover any existing defects of the heart, lungs, eyes or muscular development, and to prescribe proper measures for their correction. Particular attention is given to the fitness of candidates for the athletic teams.

PHYSIOLOGY 1. An elementary study of the mechanism of life. Attention is centered chiefly on the structure and function of the human body, but the facts of general physiology are constantly employed to throw light on the special problems of human physiology. The physical and chemical features of the material basis of life are discussed first. Following this the physiology of the cell is briefly surveyed. The remainder and larger part of the course is a study of the income of material and energy to the body, comprising the subjects of alimentation, respiration, circulation, and metabolism. As far as time and the nature of the subject permit, the facts of physiology are demonstrated to the class, and the discussions are based as far as possible on these observed phenomena. Classroom instruction is supplemented by reading of references in the manuals and periodicals of the science.

Senior elective course; prerequisite, *Biology 3-4* or *Biology 5-6*.

Three hours a week during the first semester.

PHYSIOLOGY 2. This course continues the study of physiology on lines similar to those followed in *Physiology 1*. The means by which the body is adapted to its environment is the main topic. This comprises a study of the neuro-muscular mechanism, the central nervous system, and the organs of sensation.

Senior elective course; prerequisite, *Physiology 1*.

Three hours a week during the second semester.

PHYSICAL TRAINING

Mr. SEELEY.

Exercises consisting of marching, calisthenics, and light gymnastics with wands, clubs, chest-weights, and dumb-bells.

The first six weeks are given up to outdoor work on Weston Field.

Freshman required course.

Three forty-five minute periods a week until Easter.

[In connection with this work a course of lectures on Hygiene is given in the first semester by Professor Howard. See the announcement of Physiology and Hygiene.]

Elective work in the gymnasium is offered to other classes.

BIOLOGY 5-6. *Botany, including the Principles of Forestry and Evolution of Plants.*

Biology 5. The work in the first part of the course deals with the mechanism of one of the most highly organized plants. In connection with this, Steven's *Plant Anatomy* is used as a text-book. The second part of the course treats of the life-history of such a plant. This is followed by a study of plant physiology, using Coulter, Barnes, and Cowles's *Text-book of Botany*. A study of the principles of forestry with the use of Greene's text-book completes the course.

Lectures, laboratory, text-books, and field work with our native trees.

Biology 6. The Evolution of Plants. A continuation of *Botany 1*. Types of all the plant groups from the simplest to the most highly organized are studied, their structure and life history receiving especial attention. This is made the basis for a consideration of the process of evolution in the plant world, and will include such general subjects as the origin of sex, the origin of the seed plants and its significance to man, and the origin of the coal beds. Lectures, laboratory work, and occasional field work.

Text-book, Strasburger's *A Text-book of Botany*.

Fee, \$6.00.

Junior elective course; prerequisite, *Chemistry 1-Biology 2*.

Three exercises a week through the year.

Professor CLARKE.

BIOLOGY 7-8. A continuation of *Biology 3-4*.

(a) *Zoölogy of the Chordata*. As in *Zoölogy of the Invertebrata*, instruction is by means of lectures, recitations, and laboratory work. The fishes, amphibia, reptiles, birds, and mammals are studied comparatively by means of dissections in the laboratory.

(b) *Embryology*. The second semester is given to a study of the development of the starfish, worm, frog, chick, and mammal. In the first three forms special attention is given to the early stages which follow fertilization. The work on the chick is outlined by a text-book, and followed in the laboratory by means of preparations, some of which are made by the student. It covers the development from the beginning of incubation to a stage in which the more important organs of the body have appeared. Mammalian development is compared with that of the chick, which it closely resembles, but is studied in the laboratory only by means of models and demonstration preparations.

Senior elective course; prerequisite, *Biology* 3-4.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00.

Professor KELLOGG.

CHEMISTRY

Professor LEVERETT MEARS, Assistant Professor BRAINERD MEARS,
and Mr. BAUERLE.

CHEMISTRY 1-2. *General Chemistry and Qualitative Analysis.*

Chemistry 1. General Chemistry. The principles of chemistry are studied in connection with the non-metals and their compounds. This course is given by experimental lectures, supplemented by recitations and practical work in the laboratory.

Fee, \$3.00.

Four hours a week during the first semester.

Chemistry 2. Metallic Chemistry and Qualitative Analysis. A course of lectures is given on the occurrence, properties, and uses of the metals and their compounds.

Most of the time is devoted to qualitative analysis in the laboratory. This work includes the reactions of the principal bases and acids, their detection and separation. About 100 solutions and 100 solid substances, including about 50 minerals, are analyzed during the course. This course is a continuation of *Chemistry 1*.

Fee, \$10.00 and breakage.

Four periods a week, of two hours each, during the second semester.

Sophomore elective course.

CHEMISTRY 1-BIOLOGY 2. *Chemistry 1* and *Biology 2* may be taken together as constituting a Sophomore year-course. See *Biology 2*.

CHEMISTRY 3-4. *Organic Chemistry.*

Chemistry 3. Organic Chemistry. Lectures on the compounds of carbon, including the history of chemistry and its development to the present time.

This course completes the work begun in *Chemistry 1* and continued in *Chemistry 2*.

Chemistry 4. Advanced Organic Chemistry. This course is a continuation of the work begun in *Chemistry 3*. The principles

SENIORS—CLASS OF 1913

Newman Barnes Abercrombie	<i>Windsor</i>	7 E. C.
Walter Byron Adams	<i>Geneseo, N. Y.</i>	Δ. T. House
Stanley Mason Babson	<i>South Orange, N. J.</i>	Pilgrim Inn
Henry Raymond Bacon	<i>Pittsfield</i>	A. Z. A. House
Henry Ward Banks, 3d	<i>New York, N. Y.</i>	K. A. Lodge
Alfred Clarke Bedford	<i>Brooklyn, N. Y.</i>	St. Anthony Hall
Samuel Sholes Berger	<i>Fredericksburg, Va.</i>	176 Main st.
Ronald Fletcher Bogle	<i>Wappingers Falls, N. Y.</i>	Θ. Δ. X. House
Donald Flagg Bowen	<i>Providence, R. I.</i>	9 W. C.
John Alden Bower	<i>Chouteau, Mont.</i>	31 M. H.
William Boynton	<i>St. Johnsbury, Vt.</i>	Φ. Σ. K. House
Leslie Kenneth Bradley	<i>New York, N. Y.</i>	K. A. Lodge
Cyrus Perrin Brown, Jr.	<i>Providence, R. I.</i>	Θ. Δ. X. House
Simmons Brown	<i>Portland, Me.</i>	K. A. Lodge
James Philip Cahen, Jr.	<i>New York, N. Y.</i>	157 Main st.
James Francis Carroll	<i>Troy, N. Y.</i>	Δ. T. House
William Brown Clarkson	<i>Brooklyn, N. Y.</i>	11 W. C.
Holland Coffin	<i>Northboro</i>	15 B. H.
Robert Crane	<i>Pelham Manor, N. Y.</i>	Σ. Φ. Place
Burton Sargeant Dake	<i>Cleveland, O.</i>	Δ. T. House
Arthur James Daly	<i>New York, N. Y.</i>	A. Z. A. House
Henry Trumbull Dana	<i>Philadelphia, Pa.</i>	Δ. K. E. House
John Joseph Danaher	<i>Williamstown</i>	46 Meacham St.
George Allen Davis, Jr.	<i>Lancaster, N. Y.</i>	Φ. Σ. K. House
Henry Dearborn	<i>Rye, N. Y.</i>	Δ. Δ. Φ. House
Eugene Hoyne de Bronkart	<i>Chicago, Ill.</i>	X. Φ. Lodge
Guy Eugene de Lagerberg	<i>Passaic, N. J.</i>	16 W. C.
John Clarke Dewey, Jr.	<i>Worcester</i>	K. A. Lodge
John Owen Stearns Edwards	<i>Elizabeth, N. J.</i>	39 W. H.

LIST OF ABBREVIATIONS

The following abbreviations are used in the addresses of students :

B. H.	Berkshire Hall	M. H.	Morgan Hall
C. H.	College Hall	T. B. L.	Thompson Biological Laboratory
Cr. H.	Currier Hall	T. C. L.	Thompson Chemical Laboratory
E. C.	East College	T. P. L.	Thompson Physical Laboratory
F. H.	Fayerweather Hall	W. C.	West College
J. H.	Jesup Hall	W. H.	Williams Hall

in the various periods of the earth's history but also of the changes that took place in their structure and habits, and, as far as possible, of the causes that produced these changes.

Geology 1. During the first semester that portion of the subject included in (a) *Dynamical Geology*, which deals with the forces that have shaped, and are now shaping the earth's surface, such as weathering and erosion, glaciers, volcanoes, earthquakes, etc., is considered.

(b) *Structural Geology* (with the exception of ore deposits, which will be considered in the second semester). In this division of the subject the structure of the earth's crust and the more important rocks and minerals of which it is composed are studied.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Geology 2. In the second semester the origin and occurrence of ores are first studied. This is followed by the major work of the semester, the study of evolutionary geology. The animals of the past, as shown by their fossil remains, are discussed particularly with regard to their bearing upon the theory of evolution. The fossils in the collections, and a number of casts, together with a large collection of lantern slides of restorations, are used in illustration.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Junior elective course; prerequisite, *Chemistry 1-2* or *Chemistry 1-Biology 2*.

Three hours a week through the year.

GEOLOGY 3. Advanced Geology. Beginning with a more detailed study of those subjects which are essential to the understanding of economic geology, the aim of the course is to afford the student a practical knowledge of the mineral products of the United States, such as coal, gypsum, salt, iron, lead, copper, and gold. Special attention is paid to the origin of the various deposits studied, with particular reference to the general principles governing the deposition and occurrence of each economic product discussed. Each student is required to present a typewritten report, as the result of his own observation of some local mine, quarry or other deposit of economic importance.

Senior elective course; prerequisite, *Geology 1-2*.

Three hours a week during the first semester.

MR. DAKE.

GEOLOGY 4. *Mineralogy.* The purpose of this course is to give the student the ability to determine the commoner minerals by tests that can be used in the field or with chemicals that can readily be purchased. To accomplish this object, attention is given to the identification of minerals by their physical properties as well as by blowpipe and chemical tests. A brief course in crystallography is given throughout the semester, accompanying the identification of the minerals.

This course is designed for students who plan to take advanced work in chemistry, geology, or mining.

Moses and Parson's *Mineralogy and Blow-pipe Analysis* is used. Senior elective course; prerequisite, *Geology 1-2*.

Three exercises a week during the second semester.

Fee, \$5.00.

MATHEMATICS

Professor FERRY, Associate Professor HARDY, Assistant Professor SHEPARD, Dr. AGARD, and Mr. BOTSFORD.

MATHEMATICS 1-2. *Algebra, Solid Geometry, Plane Trigonometry, and Surveying.*

Advanced Algebra. Binomial theorem, logarithms, permutations, combinations, method of undetermined coefficients, determinants, theory of equations, etc. Rietz and Crathorne's *College Algebra* is used as a text-book.

Solid Geometry. Books VI, VII, and VIII of Wentworth's *New Plane and Solid Geometry*, together with original propositions and numerical problems.

Plane Trigonometry. The trigonometric functions, trigonometric analysis, solutions of right and oblique triangles, etc.

Field Work in Surveying. The practical use of instruments, including determination of heights, simple triangulation, measurement of areas, and leveling. This portion of the course is optional.

Freshman required course.

Four hours a week through the year.

Associate Professor HARDY, Assistant Professor SHEPARD,
Dr. AGARD and Mr. BOTSFORD.

MATHEMATICS 3-4. *Analytic Geometry and Differential Calculus.*

Mathematics 3. Analytic Geometry. Plane analytic geometry,—the straight line, circle, parabola, ellipse, and hyperbola,—with an

introduction to analytic geometry of three dimensions. Wentworth's *Analytic Geometry* is the text-book used.

The first semester.

Professor FERRY and Assistant Professor SHEPARD.

Mathematics 4. Differential Calculus. Methods of differentiation, expansion of functions into series, indeterminate forms, the simpler applications to mechanics and to the theory of plane curves, etc. Granville's *Calculus* is the text-book used.

The second semester.

Assistant Professor SHEPARD.

Sophomore elective course, required of Freshmen in Admission Groups IV and V; prerequisite, *Mathematics 1-2*.

Four hours a week through the year.

MATHEMATICS 5-6. *Differential and Integral Calculus.*

Mathematics 5. Integral Calculus. Derivation and application of the fundamental formulas of integration; applications of the integral calculus to the determination of lengths of curves, areas and volumes, mean values, moments of inertia, etc., based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The first semester.

Mathematics 6. Differential and Integral Calculus. A continuation of the work of the first semester. Numerous applications of the differential and integral calculus are considered. The work is based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The second semester.

Junior elective course, open also to Sophomores in Admission Groups IV and V; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Associate Professor HARDY.

MATHEMATICS 7-8. *Descriptive Geometry.* Problems of the straight line and plane, curved surfaces, intersections and development of surfaces, simple warped surfaces. Elements of shades and shadows. Anthony and Ashley's *Descriptive Geometry* and Fishleigh's *Problems* are used as text-books.

Junior elective course; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Assistant Professor SHEPARD.

MATHEMATICS 9. *Differential Equations.* Methods of solution of the simpler forms of differential equations, applications to many problems of mathematical physics, etc. The course is based on Cohen's *Differential Equations*.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the first semester.

Dr. AGARD.

MATHEMATICS 10. *Modern Methods in Analytic Geometry.* Abridged notation, line coördinates, harmonic divisions, projection, etc., with many applications. Lectures, with references to Salmon's *Conic Sections* and other works.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the second semester.

Professor FERRY.

PHYSICS

Professor McELFRESH and Mr. SHRADER.

PHYSICS 1-2. *General Physics.* This course deals with the elementary facts and principles of physics and with the applications of physical laws to the experiences and phenomena of daily life. It includes elementary mechanics, sound, heat, light, magnetism, and electricity.

Sophomore elective course.

Four exercises a week through the year; these are lectures and recitations (three hours a week) and laboratory work (one two-hour exercise a week). For laboratory work the class is divided into small divisions; two-hour periods are assigned for this work to fit individual schedules.

Fee, \$5.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 3-4. *Experimental Physics.* Mechanics, sound, heat, light, magnetism, and electricity. This course consists of a series of physical measurements in the laboratory, accompanied by lectures. The lectures deal with the methods and principles involved in the laboratory work and also discuss certain physical problems which do not readily lend themselves to laboratory experimentation. In the laboratory work high-grade instruments of precision are employed and the course is expected to give some skill in

accurate measurement. The primary object of the laboratory work is to enable the student to familiarize himself with physical phenomena by direct personal observation.

Junior elective course; prerequisite, *Physics* 1-2.

Three exercises a week through the year; lectures and recitations (one hour a week), and laboratory work (two two-hour periods a week).

Fee, \$10.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 5-6. *Electrical Measurements and Practical Applications of Electricity*. This course consists of lectures and laboratory work and includes a study of the magnetic properties of iron and steel, of direct and alternating current phenomena, and of their practical illustration in dynamo-electric machinery.

Senior elective course; prerequisite, *Physics* 3-4.

Three exercises a week through the year; lectures and recitations (two hours a week), and laboratory work (one two-hour period a week).

Fee, \$10.00.

Mr. SHRADER.

PHYSICS 7. *Experimental Mechanics*. The general principles of mechanics of solids; statics and kinetics of rigid bodies. Lectures, problems, and laboratory work.

Senior elective course; prerequisite, *Mathematics* 3-4 and *Physics* 1-2.

Three exercises a week during the first semester.

Professor McELFRESH.

PHYSICS 8. *Experimental Mechanics*. A continuation of *Physics* 7. Elasticity of solids, liquids, and gases. Statics and kinetics of liquids and gases.

Senior elective course; prerequisite, *Physics* 7.

Three exercises a week during the second semester.

Professor McELFRESH.

PHYSIOLOGY AND HYGIENE

Professor HOWARD.

HYGIENE. A series of lectures and recitations on the preservation of health. The lectures are designed to acquaint the student with the causes of disease, to point out the conditions of healthy

living, and to inculcate those habits that promote physical efficiency. In several lectures attention is given to the problems of public health, especially those of safeguarding the food-supply and stamping out communicable disease.

Freshman required course.

One hour a week during the first semester.

Shortly after the opening of college in the fall, each new student is given a physical examination, the objects of which are to discover any existing defects of the heart, lungs, eyes or muscular development, and to prescribe proper measures for their correction. Particular attention is given to the fitness of candidates for the athletic teams.

PHYSIOLOGY 1. An elementary study of the mechanism of life. Attention is centered chiefly on the structure and function of the human body, but the facts of general physiology are constantly employed to throw light on the special problems of human physiology. The physical and chemical features of the material basis of life are discussed first. Following this the physiology of the cell is briefly surveyed. The remainder and larger part of the course is a study of the income of material and energy to the body, comprising the subjects of alimentation, respiration, circulation, and metabolism. As far as time and the nature of the subject permit, the facts of physiology are demonstrated to the class, and the discussions are based as far as possible on these observed phenomena. Classroom instruction is supplemented by reading of references in the manuals and periodicals of the science.

Senior elective course; prerequisite, *Biology 3-4* or *Biology 5-6*.

Three hours a week during the first semester.

PHYSIOLOGY 2. This course continues the study of physiology on lines similar to those followed in *Physiology 1*. The means by which the body is adapted to its environment is the main topic. This comprises a study of the neuro-muscular mechanism, the central nervous system, and the organs of sensation.

Senior elective course; prerequisite, *Physiology 1*.

Three hours a week during the second semester.

PHYSICAL TRAINING

Mr. SEELEY.

Exercises consisting of marching, calisthenics, and light gymnastics with wands, clubs, chest-weights, and dumb-bells.

The first six weeks are given up to outdoor work on Weston Field.

Freshman required course.

Three forty-five minute periods a week until Easter.

[In connection with this work a course of lectures on Hygiene is given in the first semester by Professor Howard. See the announcement of Physiology and Hygiene.]

Elective work in the gymnasium is offered to other classes.

GENERAL INFORMATION

ORDER AND DISCIPLINE

It is the aim of the college to develop in the individual student the sense of personal responsibility for good order and a high standard of scholarship, and to secure, in the largest measure, his coöperation with the Faculty in the development of his own character. But if such coöperation is plainly impossible, a student may be dismissed from college at any time, even without previous warning.

HONOR SYSTEM

All college examinations are conducted under an honor system, established in 1896, by which the presence of proctors in the examination room is dispensed with and each student is placed on his honor. The following declaration is necessary to make any examination or other work written on paper in the classroom valid: *I have neither given nor received aid in this examination.*

All cases of suspected fraud are dealt with by a committee of ten students, including representatives from each class, who have the power to decide on the question of guilt and to recommend to the Faculty the penalty of dismissal from college in the case of a Senior, Junior, or Sophomore, and of suspension in the case of a Freshman.

REGISTRATION

All students are required to register on Tuesday, Wednesday, or the morning of Thursday at the beginning of the college year and again, as occasion may demand, shortly before the beginning of the second semester and near the

close of the second semester. For unexcused delay in registration, a fee of five dollars is imposed.

ATTENDANCE ON COLLEGE EXERCISES

Attendance on all individual appointments in the departments of English, and Physiology and Hygiene, on all semi-annual or final examinations, and on six-sevenths of the chapel services, is required of all students; attendance on nine-tenths of all other exercises is required of those Seniors, Juniors, and Sophomores, whose grades during the previous semester were as high as B in at least half their hours and as high as C in all their hours; and attendance on nineteen-twentieths of these exercises is required of all other students.

Each student is allowed to be absent from the Sunday morning service twice and from the morning prayers and Sunday afternoon service combined eighteen times each semester.

The regulation of attendance on both the secular and the religious exercises is entrusted to the Dean. He is authorized to establish such rules for attendance on the religious exercises of the college as he may deem necessary, and to place on probation any student who fails to meet these requirements, or whose attendance on recitations and lectures is especially irregular. If a student does not comply with the conditions of the probation, the Dean may dismiss him from college; but any student thus dismissed has the right of an appeal through the Dean to the Committee on Administration.

MASTER OF ARTS

The degree of Master of Arts is conferred upon Bachelors of Williams College of at least one year's standing who, having spent one year in residence at the college,

pursuing two approved courses of study as explained below, have passed a satisfactory examination in each subject, and have submitted a satisfactory thesis.

The degree is conferred upon Bachelors of Williams College who have spent one year in residence at any academic institution, pursuing two approved courses as below, provided that none of the work taken for the degree be used in fulfilment of the requirements for degrees elsewhere, and having been registered for the Master's degree for not less than one college year, have fulfilled the conditions as to examinations and thesis.

The degree is conferred upon Bachelors of Williams College who, not having been in residence, but having been registered as candidates for the degree not less than two years, have fulfilled the conditions as to courses, examinations, and thesis.

Undergraduates of Williams College who at the beginning of their Senior year require not more than eight semester hours to complete the requirements for the Bachelor's degree may apply the remainder of their allowed semester hours toward the Master's degree, receiving the same one year after graduation, provided that they have satisfied the conditions as to courses, examinations, and thesis.

The degree is conferred upon Bachelors of other colleges conferring the Bachelor's degree under conditions equivalent to those required at this college, provided that the approved courses are pursued in residence at Williams College under the specified conditions as to time, examinations, and thesis.

Each candidate must submit two courses of study, which together shall be equivalent to the work of a fifth college year. Of these courses, one, to be known as the major course, must be equivalent to at least twenty semester hours, and the other, to be known as the minor course, must be equivalent to at least ten semester hours.

Each candidate will outline his courses under the direction of the heads of the departments interested and the Committee on Graduate Students, who together shall be empowered to decide whether the candidate may pursue certain advanced undergraduate courses as part of the work leading to the degree.

Candidates for the Master's degree are required to pass their examinations with at least a B grade.

The thesis required of each candidate must treat a subject related to the major course. It must be submitted not later than May fifteenth of the year in which the candidate desires to be examined, and must meet the approval of the professor to whose department it is related and of the Committee on Graduate Students. A copy of the thesis, printed or typewritten on paper of the size generally used in a typewriter, must be deposited in the College Library.

Each candidate must file his registration with the Chairman of the Committee on Graduate Students not later than October fifth of the year in which he desires to enter on his work. The registration must be renewed not later than October fifth of each year for which the applicant desires to be considered a candidate, and, in case of non-resident candidates, the renewal of the registration must be accompanied by a statement showing the progress that has been made during the year.

Candidates for the degree must pay to the Treasurer of the College twenty dollars at the time of the first registration, and five dollars at the time of the final examination. No further charge is made for the diploma.

The degree must be taken not later than three years after the first registration, unless the period be extended by special vote of the Committee on Graduate Students. The candidate must give notice of his readiness for the final examinations not later than May first of the year

GEOLOGY 4. *Mineralogy.* The purpose of this course is to give the student the ability to determine the commoner minerals by tests that can be used in the field or with chemicals that can readily be purchased. To accomplish this object, attention is given to the identification of minerals by their physical properties as well as by blowpipe and chemical tests. A brief course in crystallography is given throughout the semester, accompanying the identification of the minerals.

This course is designed for students who plan to take advanced work in chemistry, geology, or mining.

Moses and Parson's *Mineralogy and Blow-pipe Analysis* is used. Senior elective course; prerequisite, *Geology 1-2*.

Three exercises a week during the second semester.

Fee, \$5.00.

MATHEMATICS

Professor FERRY, Associate Professor HARDY, Assistant Professor SHEPARD, Dr. AGARD, and Mr. BOTSFORD.

MATHEMATICS 1-2. *Algebra, Solid Geometry, Plane Trigonometry, and Surveying.*

Advanced Algebra. Binomial theorem, logarithms, permutations, combinations, method of undetermined coefficients, determinants, theory of equations, etc. Rietz and Crathorne's *College Algebra* is used as a text-book.

Solid Geometry. Books VI, VII, and VIII of Wentworth's *New Plane and Solid Geometry*, together with original propositions and numerical problems.

Plane Trigonometry. The trigonometric functions, trigonometric analysis, solutions of right and oblique triangles, etc.

Field Work in Surveying. The practical use of instruments, including determination of heights, simple triangulation, measurement of areas, and leveling. This portion of the course is optional.

Freshman required course.

Four hours a week through the year.

Associate Professor HARDY, Assistant Professor SHEPARD,
Dr. AGARD and Mr. BOTSFORD.

MATHEMATICS 3-4. *Analytic Geometry and Differential Calculus.*

Mathematics 3. Analytic Geometry. Plane analytic geometry,—the straight line, circle, parabola, ellipse, and hyperbola,—with an

introduction to analytic geometry of three dimensions. Wentworth's *Analytic Geometry* is the text-book used.

The first semester.

Professor FERRY and Assistant Professor SHEPARD.

Mathematics 4. Differential Calculus. Methods of differentiation, expansion of functions into series, indeterminate forms, the simpler applications to mechanics and to the theory of plane curves, etc. Granville's *Calculus* is the text-book used.

The second semester.

Assistant Professor SHEPARD.

Sophomore elective course, required of Freshmen in Admission Groups IV and V; prerequisite, *Mathematics 1-2*.

Four hours a week through the year.

MATHEMATICS 5-6. *Differential and Integral Calculus.*

Mathematics 5. Integral Calculus. Derivation and application of the fundamental formulas of integration; applications of the integral calculus to the determination of lengths of curves, areas and volumes, mean values, moments of inertia, etc., based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The first semester.

Mathematics 6. Differential and Integral Calculus. A continuation of the work of the first semester. Numerous applications of the differential and integral calculus are considered. The work is based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The second semester.

Junior elective course, open also to Sophomores in Admission Groups IV and V; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Associate Professor HARDY.

MATHEMATICS 7-8. *Descriptive Geometry.* Problems of the straight line and plane, curved surfaces, intersections and development of surfaces, simple warped surfaces. Elements of shades and shadows. Anthony and Ashley's *Descriptive Geometry* and Fishleigh's *Problems* are used as text-books.

Junior elective course; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Assistant Professor SHEPARD.

MATHEMATICS 9. *Differential Equations.* Methods of solution of the simpler forms of differential equations, applications to many problems of mathematical physics, etc. The course is based on Cohen's *Differential Equations*.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the first semester.

Dr. AGARD.

MATHEMATICS 10. *Modern Methods in Analytic Geometry.* Abridged notation, line coördinates, harmonic divisions, projection, etc., with many applications. Lectures, with references to Salmon's *Conic Sections* and other works.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the second semester.

Professor FERRY.

PHYSICS

Professor McELFRESH and Mr. SHRADER.

PHYSICS 1-2. *General Physics.* This course deals with the elementary facts and principles of physics and with the applications of physical laws to the experiences and phenomena of daily life. It includes elementary mechanics, sound, heat, light, magnetism, and electricity.

Sophomore elective course.

Four exercises a week through the year; these are lectures and recitations (three hours a week) and laboratory work (one two-hour exercise a week). For laboratory work the class is divided into small divisions; two-hour periods are assigned for this work to fit individual schedules.

Fee, \$5.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 3-4. *Experimental Physics.* Mechanics, sound, heat, light, magnetism, and electricity. This course consists of a series of physical measurements in the laboratory, accompanied by lectures. The lectures deal with the methods and principles involved in the laboratory work and also discuss certain physical problems which do not readily lend themselves to laboratory experimentation. In the laboratory work high-grade instruments of precision are employed and the course is expected to give some skill in

accurate measurement. The primary object of the laboratory work is to enable the student to familiarize himself with physical phenomena by direct personal observation.

Junior elective course; prerequisite, *Physics* 1-2.

Three exercises a week through the year; lectures and recitations (one hour a week), and laboratory work (two two-hour periods a week).

Fee, \$10.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 5-6. *Electrical Measurements and Practical Applications of Electricity.* This course consists of lectures and laboratory work and includes a study of the magnetic properties of iron and steel, of direct and alternating current phenomena, and of their practical illustration in dynamo-electric machinery.

Senior elective course; prerequisite, *Physics* 3-4.

Three exercises a week through the year; lectures and recitations (two hours a week), and laboratory work (one two-hour period a week).

Fee, \$10.00.

Mr. SHRADER.

PHYSICS 7. *Experimental Mechanics.* The general principles of mechanics of solids; statics and kinetics of rigid bodies. Lectures, problems, and laboratory work.

Senior elective course; prerequisite, *Mathematics* 3-4 and *Physics* 1-2.

Three exercises a week during the first semester.

Professor McELFRESH.

PHYSICS 8. *Experimental Mechanics.* A continuation of *Physics* 7. Elasticity of solids, liquids, and gases. Statics and kinetics of liquids and gases.

Senior elective course; prerequisite, *Physics* 7.

Three exercises a week during the second semester.

Professor McELFRESH.

PHYSIOLOGY AND HYGIENE

Professor HOWARD.

HYGIENE. A series of lectures and recitations on the preservation of health. The lectures are designed to acquaint the student with the causes of disease, to point out the conditions of healthy

living, and to inculcate those habits that promote physical efficiency. In several lectures attention is given to the problems of public health, especially those of safeguarding the food-supply and stamping out communicable disease.

Freshman required course.

One hour a week during the first semester.

Shortly after the opening of college in the fall, each new student is given a physical examination, the objects of which are to discover any existing defects of the heart, lungs, eyes or muscular development, and to prescribe proper measures for their correction. Particular attention is given to the fitness of candidates for the athletic teams.

PHYSIOLOGY 1. An elementary study of the mechanism of life. Attention is centered chiefly on the structure and function of the human body, but the facts of general physiology are constantly employed to throw light on the special problems of human physiology. The physical and chemical features of the material basis of life are discussed first. Following this the physiology of the cell is briefly surveyed. The remainder and larger part of the course is a study of the income of material and energy to the body, comprising the subjects of alimentation, respiration, circulation, and metabolism. As far as time and the nature of the subject permit, the facts of physiology are demonstrated to the class, and the discussions are based as far as possible on these observed phenomena. Classroom instruction is supplemented by reading of references in the manuals and periodicals of the science.

Senior elective course; prerequisite, *Biology 3-4* or *Biology 5-6*.

Three hours a week during the first semester.

PHYSIOLOGY 2. This course continues the study of physiology on lines similar to those followed in *Physiology 1*. The means by which the body is adapted to its environment is the main topic. This comprises a study of the neuro-muscular mechanism, the central nervous system, and the organs of sensation.

Senior elective course; prerequisite, *Physiology 1*.

Three hours a week during the second semester.

PHYSICAL TRAINING

Mr. SEELEY.

Exercises consisting of marching, calisthenics, and light gymnastics with wands, clubs, chest-weights, and dumb-bells.

The first six weeks are given up to outdoor work on Weston Field.

Freshman required course.

Three forty-five minute periods a week until Easter.

[In connection with this work a course of lectures on Hygiene is given in the first semester by Professor Howard. See the announcement of Physiology and Hygiene.]

Elective work in the gymnasium is offered to other classes.

GENERAL INFORMATION

ORDER AND DISCIPLINE

It is the aim of the college to develop in the individual student the sense of personal responsibility for good order and a high standard of scholarship, and to secure, in the largest measure, his coöperation with the Faculty in the development of his own character. But if such coöperation is plainly impossible, a student may be dismissed from college at any time, even without previous warning.

HONOR SYSTEM

All college examinations are conducted under an honor system, established in 1896, by which the presence of proctors in the examination room is dispensed with and each student is placed on his honor. The following declaration is necessary to make any examination or other work written on paper in the classroom valid: *I have neither given nor received aid in this examination.*

All cases of suspected fraud are dealt with by a committee of ten students, including representatives from each class, who have the power to decide on the question of guilt and to recommend to the Faculty the penalty of dismissal from college in the case of a Senior, Junior, or Sophomore, and of suspension in the case of a Freshman.

REGISTRATION

All students are required to register on Tuesday, Wednesday, or the morning of Thursday at the beginning of the college year and again, as occasion may demand, shortly before the beginning of the second semester and near the

close of the second semester. For unexcused delay in registration, a fee of five dollars is imposed.

ATTENDANCE ON COLLEGE EXERCISES

Attendance on all individual appointments in the departments of English, and Physiology and Hygiene, on all semi-annual or final examinations, and on six-sevenths of the chapel services, is required of all students; attendance on nine-tenths of all other exercises is required of those Seniors, Juniors, and Sophomores, whose grades during the previous semester were as high as B in at least half their hours and as high as C in all their hours; and attendance on nineteen-twentieths of these exercises is required of all other students.

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MASTER OF ARTS

The degree of Master of Arts is conferred upon Bachelors of Williams College of at least one year's standing who, having spent one year in residence at the college,

of organic chemistry are applied to the preparation and analysis of organic compounds in the laboratory with a discussion of the reactions involved. Cohen's book on organic preparations is used.

Junior elective course; prerequisite, *Chemistry 1-2*.

Three exercises a week, of two hours each, through the year.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

CHEMISTRY 5. *Quantitative Analysis.* This course embraces the quantitative determination and separation of the principal bases and acids. Both gravimetric and volumetric methods are employed.

Senior elective course; prerequisite, *Chemistry 3-4*.

Three exercises a week, of two hours each, during the first semester.

Fee, \$10.00 and breakage.

Professor LEVERETT MEARS and

Assistant Professor BRAINERD MEARS.

CHEMISTRY 6. *Physical and Advanced Inorganic Chemistry.* This course consists of lectures on the modern theories of physical chemistry together with experimental work in the laboratory. A course is also given in the preparation of inorganic compounds with a discussion of the reactions involved.

For those who prefer it, a parallel course in physiological chemistry may be offered.

Senior elective course; prerequisite, *Chemistry 3-4*.

Three periods a week, of two hours each, during the second semester.

Fee, \$10.00 and breakage.

Assistant Professor BRAINERD MEARS.

GEOLOGY AND MINERALOGY

Professor CLELAND and Mr. DAKE.

GEOLOGY 1-2. *General Geology.* The purpose of the course in general geology is to give the student such a knowledge of the principles of geology that he may be able to understand what he sees of the earth's surface and to know what force or forces have produced this feature of the landscape and what that feature. A study is also made of the forces themselves, such as, for example, glaciers, volcanoes, earthquakes, and erosion. Some time is spent on the life of the past, not only in a description of the animals that lived

in the various periods of the earth's history but also of the changes that took place in their structure and habits, and, as far as possible, of the causes that produced these changes.

Geology 1. During the first semester that portion of the subject included in (a) *Dynamical Geology*, which deals with the forces that have shaped, and are now shaping the earth's surface, such as weathering and erosion, glaciers, volcanoes, earthquakes, etc., is considered.

(b) *Structural Geology* (with the exception of ore deposits, which will be considered in the second semester). In this division of the subject the structure of the earth's crust and the more important rocks and minerals of which it is composed are studied.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Geology 2. In the second semester the origin and occurrence of ores are first studied. This is followed by the major work of the semester, the study of evolutionary geology. The animals of the past, as shown by their fossil remains, are discussed particularly with regard to their bearing upon the theory of evolution. The fossils in the collections, and a number of casts, together with a large collection of lantern slides of restorations, are used in illustration.

Excursions in the vicinity of Williamstown, as well as one or two to some distance, are taken.

Junior elective course; prerequisite, *Chemistry 1-2* or *Chemistry 1-Biology 2*.

Three hours a week through the year.

GEOLOGY 3. Advanced Geology. Beginning with a more detailed study of those subjects which are essential to the understanding of economic geology, the aim of the course is to afford the student a practical knowledge of the mineral products of the United States, such as coal, gypsum, salt, iron, lead, copper, and gold. Special attention is paid to the origin of the various deposits studied, with particular reference to the general principles governing the deposition and occurrence of each economic product discussed. Each student is required to present a typewritten report, as the result of his own observation of some local mine, quarry or other deposit of economic importance.

Senior elective course; prerequisite, *Geology 1-2*.

Three hours a week during the first semester.

MR. DAKE.

GEOLOGY 4. Mineralogy. The purpose of this course is to give the student the ability to determine the commoner minerals by tests that can be used in the field or with chemicals that can readily be purchased. To accomplish this object, attention is given to the identification of minerals by their physical properties as well as by blowpipe and chemical tests. A brief course in crystallography is given throughout the semester, accompanying the identification of the minerals.

This course is designed for students who plan to take advanced work in chemistry, geology, or mining.

Moses and Parson's *Mineralogy and Blow-pipe Analysis* is used. Senior elective course; prerequisite, *Geology 1-2*.

Three exercises a week during the second semester.

Fee, \$5.00.

MATHEMATICS

Professor FERRY, Associate Professor HARDY, Assistant Professor SHEPARD, Dr. AGARD, and Mr. BOTSFORD.

MATHEMATICS 1-2. *Algebra, Solid Geometry, Plane Trigonometry, and Surveying.*

Advanced Algebra. Binomial theorem, logarithms, permutations, combinations, method of undetermined coefficients, determinants, theory of equations, etc. Rietz and Crathorne's *College Algebra* is used as a text-book.

Solid Geometry. Books VI, VII, and VIII of Wentworth's *New Plane and Solid Geometry*, together with original propositions and numerical problems.

Plane Trigonometry. The trigonometric functions, trigonometric analysis, solutions of right and oblique triangles, etc.

Field Work in Surveying. The practical use of instruments, including determination of heights, simple triangulation, measurement of areas, and leveling. This portion of the course is optional. Freshman required course.

Four hours a week through the year.

Associate Professor HARDY, Assistant Professor SHEPARD,
Dr. AGARD and Mr. BOTSFORD.

MATHEMATICS 3-4. *Analytic Geometry and Differential Calculus.*

Mathematics 3. Analytic Geometry. Plane analytic geometry,—the straight line, circle, parabola, ellipse, and hyperbola,—with an

introduction to analytic geometry of three dimensions. Wentworth's *Analytic Geometry* is the text-book used.

The first semester.

Professor FERRY and Assistant Professor SHEPARD.

Mathematics 4. Differential Calculus. Methods of differentiation, expansion of functions into series, indeterminate forms, the simpler applications to mechanics and to the theory of plane curves, etc. Granville's *Calculus* is the text-book used.

The second semester.

Assistant Professor SHEPARD.

Sophomore elective course, required of Freshmen in Admission Groups IV and V; prerequisite, *Mathematics 1-2*.

Four hours a week through the year.

MATHEMATICS 5-6. *Differential and Integral Calculus.*

Mathematics 5. Integral Calculus. Derivation and application of the fundamental formulas of integration; applications of the integral calculus to the determination of lengths of curves, areas and volumes, mean values, moments of inertia, etc., based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The first semester.

Mathematics 6. Differential and Integral Calculus. A continuation of the work of the first semester. Numerous applications of the differential and integral calculus are considered. The work is based on Granville's *Calculus* and *A Course in Mathematics* by Woods and Bailey.

The second semester.

Junior elective course, open also to Sophomores in Admission Groups IV and V; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Associate Professor HARDY.

MATHEMATICS 7-8. *Descriptive Geometry.* Problems of the straight line and plane, curved surfaces, intersections and development of surfaces, simple warped surfaces. Elements of shades and shadows. Anthony and Ashley's *Descriptive Geometry* and Fishleigh's *Problems* are used as text-books.

Junior elective course; prerequisite, *Mathematics 3-4*.

Three hours a week through the year.

Assistant Professor SHEPARD.

MATHEMATICS 9. *Differential Equations.* Methods of solution of the simpler forms of differential equations, applications to many problems of mathematical physics, etc. The course is based on Cohen's *Differential Equations*.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the first semester.

Dr. AGARD.

MATHEMATICS 10. *Modern Methods in Analytic Geometry.* Abridged notation, line coördinates, harmonic divisions, projection, etc., with many applications. Lectures, with references to Salmon's *Conic Sections* and other works.

Senior elective course; prerequisite, *Mathematics 5-6*.

Three hours a week during the second semester.

Professor FERRY.

PHYSICS

Professor McELFRESH and Mr. SHRADER.

PHYSICS 1-2. *General Physics.* This course deals with the elementary facts and principles of physics and with the applications of physical laws to the experiences and phenomena of daily life. It includes elementary mechanics, sound, heat, light, magnetism, and electricity.

Sophomore elective course.

Four exercises a week through the year; these are lectures and recitations (three hours a week) and laboratory work (one two-hour exercise a week). For laboratory work the class is divided into small divisions; two-hour periods are assigned for this work to fit individual schedules.

Fee, \$5.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 3-4. *Experimental Physics.* Mechanics, sound, heat, light, magnetism, and electricity. This course consists of a series of physical measurements in the laboratory, accompanied by lectures. The lectures deal with the methods and principles involved in the laboratory work and also discuss certain physical problems which do not readily lend themselves to laboratory experimentation. In the laboratory work high-grade instruments of precision are employed and the course is expected to give some skill in

accurate measurement. The primary object of the laboratory work is to enable the student to familiarize himself with physical phenomena by direct personal observation.

Junior elective course; prerequisite, *Physics 1-2*.

Three exercises a week through the year; lectures and recitations (one hour a week), and laboratory work (two two-hour periods a week).

Fee, \$10.00.

Professor McELFRESH and Mr. SHRADER.

PHYSICS 5-6. *Electrical Measurements and Practical Applications of Electricity.* This course consists of lectures and laboratory work and includes a study of the magnetic properties of iron and steel, of direct and alternating current phenomena, and of their practical illustration in dynamo-electric machinery.

Senior elective course; prerequisite, *Physics 3-4*.

Three exercises a week through the year; lectures and recitations (two hours a week), and laboratory work (one two-hour period a week).

Fee, \$10.00.

Mr. SHRADER.

PHYSICS 7. *Experimental Mechanics.* The general principles of mechanics of solids; statics and kinetics of rigid bodies. Lectures, problems, and laboratory work.

Senior elective course; prerequisite, *Mathematics 3-4* and *Physics 1-2*.

Three exercises a week during the first semester.

Professor McELFRESH.

PHYSICS 8. *Experimental Mechanics.* A continuation of *Physics 7*. Elasticity of solids, liquids, and gases. Statics and kinetics of liquids and gases.

Senior elective course; prerequisite, *Physics 7*.

Three exercises a week during the second semester.

Professor McELFRESH.

PHYSIOLOGY AND HYGIENE

Professor HOWARD.

HYGIENE. A series of lectures and recitations on the preservation of health. The lectures are designed to acquaint the student with the causes of disease, to point out the conditions of healthy

living, and to inculcate those habits that promote physical efficiency. In several lectures attention is given to the problems of public health, especially those of safeguarding the food-supply and stamping out communicable disease.

Freshman required course.

One hour a week during the first semester.

Shortly after the opening of college in the fall, each new student is given a physical examination, the objects of which are to discover any existing defects of the heart, lungs, eyes or muscular development, and to prescribe proper measures for their correction. Particular attention is given to the fitness of candidates for the athletic teams.

PHYSIOLOGY 1. An elementary study of the mechanism of life. Attention is centered chiefly on the structure and function of the human body, but the facts of general physiology are constantly employed to throw light on the special problems of human physiology. The physical and chemical features of the material basis of life are discussed first. Following this the physiology of the cell is briefly surveyed. The remainder and larger part of the course is a study of the income of material and energy to the body, comprising the subjects of alimentation, respiration, circulation, and metabolism. As far as time and the nature of the subject permit, the facts of physiology are demonstrated to the class, and the discussions are based as far as possible on these observed phenomena. Classroom instruction is supplemented by reading of references in the manuals and periodicals of the science.

Senior elective course; prerequisite, *Biology 3-4* or *Biology 5-6*.

Three hours a week during the first semester.

PHYSIOLOGY 2. This course continues the study of physiology on lines similar to those followed in *Physiology 1*. The means by which the body is adapted to its environment is the main topic. This comprises a study of the neuro-muscular mechanism, the central nervous system, and the organs of sensation.

Senior elective course; prerequisite, *Physiology 1*.

Three hours a week during the second semester.

PHYSICAL TRAINING

Mr. SEELEY.

Exercises consisting of marching, calisthenics, and light gymnastics with wands, clubs, chest-weights, and dumb-bells.

The first six weeks are given up to outdoor work on Weston Field.

Freshman required course.

Three forty-five minute periods a week until Easter.

[In connection with this work a course of lectures on Hygiene is given in the first semester by Professor Howard. See the announcement of Physiology and Hygiene.]

Elective work in the gymnasium is offered to other classes.

GENERAL INFORMATION

ORDER AND DISCIPLINE

It is the aim of the college to develop in the individual student the sense of personal responsibility for good order and a high standard of scholarship, and to secure, in the largest measure, his coöperation with the Faculty in the development of his own character. But if such coöperation is plainly impossible, a student may be dismissed from college at any time, even without previous warning.

HONOR SYSTEM

All college examinations are conducted under an honor system, established in 1896, by which the presence of proctors in the examination room is dispensed with and each student is placed on his honor. The following declaration is necessary to make any examination or other work written on paper in the classroom valid: *I have neither given nor received aid in this examination.*

All cases of suspected fraud are dealt with by a committee of ten students, including representatives from each class, who have the power to decide on the question of guilt and to recommend to the Faculty the penalty of dismissal from college in the case of a Senior, Junior, or Sophomore, and of suspension in the case of a Freshman.

REGISTRATION

All students are required to register on Tuesday, Wednesday, or the morning of Thursday at the beginning of the college year and again, as occasion may demand, shortly before the beginning of the second semester and near the

close of the second semester. For unexcused delay in registration, a fee of five dollars is imposed.

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Attendance on all individual appointments in the departments of English, and Physiology and Hygiene, on all semi-annual or final examinations, and on six-sevenths of the chapel services, is required of all students; attendance on nine-tenths of all other exercises is required of those Seniors, Juniors, and Sophomores, whose grades during the previous semester were as high as B in at least half their hours and as high as C in all their hours; and attendance on nineteen-twentieths of these exercises is required of all other students.

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MASTER OF ARTS

The degree of Master of Arts is conferred upon Bachelors of Williams College of at least one year's standing who, having spent one year in residence at the college,

REVISED LIST OF SCHOLARSHIP FUNDS

The John C. Baldwin Fund, 1871.....	\$27,915.14
The William Hilton Fund, 1897, 1899.....	25,710.00
The Alumni Scholarship Fund, 1870.....	10,000.00
The Stephen Stickney Family Memorial Fund, 1910.....	10,000.00
The Mrs. Abby Burrall Mills Fund, 1876.....	8,300.00
The Massachusetts Fund, 1869.....	7,500.00
The Woodbridge Little Fund, 1811, 1813.....	6,000.00
The Ebenezer R. Goodnow Scholarship Fund, 1894.....	6,000.00
The Moses Day Fund, 1880.....	5,000.00
The Thomas Thornton Read Permanent Fund, 1888.....	5,948.93
The Mary Brown Ward Warner Scholarship, 1909.....	5,000.00
The three Commonwealth Scholarships, 1861.....	4,500.00
The Horace Nathaniel Pennoyer Scholarship, 1895.....	3,500.00
The Francis Henshaw Dewey Scholarship, 1888.....	3,000.00
The Henshaw Scholarship, 1888.....	3,000.00
The Joseph White Memorial Scholarship, 1903.....	3,000.00
The Thornton Read Scholarship, 1875.....	2,500.00
The Scholarship of the Class of 1851.....	2,500.00
The Scholarship of the Class of 1852.....	2,500.00
The Mrs. Louisa F. Bartlett Scholarship, 1874.....	2,500.00
The Homer Bartlett Scholarship, 1861, 1874.....	2,500.00
The William Hyde Scholarship, 1869, 1875.....	2,500.00
The Mrs. William Hyde Scholarship, 1880.....	4,765.25
The Orrin Sage Scholarship, 1853, 1875.....	2,500.00
The Miss Sarah Ruth Sage Scholarship, 1880.....	4,756.25
The Hancock Scholarship, 1875.....	2,500.00
The Olin White Geer Memorial Scholarship, 1884.....	2,500.00
The Paul Ansel Chadbourne Scholarship, 1889.....	2,500.00
The Charles Henry Thomson Scholarship, 1871.....	2,500.00
The James Ruthven Adriance Memorial Scholarship, 1880.....	2,500.00
The Samuel Dennis Warren Scholarship, 1870.....	2,500.00
The Charles Franklin Gilson Scholarship, 1881.....	2,500.00
The Scholarship of the Class of 1867.....	2,500.00
The Scholarship of the Class of 1862.....	2,500.00
The Ephraim Flint Scholarship, 1904.....	2,500.00
The Abraham Lansing Scholarship, 1906.....	2,500.00
The Henry P. Brush Scholarship, 1885.....	2,375.00
The Amos Lawrence Scholarships, 1847.....	2,000.00
The Charles Augustus Dewey Scholarship, 1866, 1870.....	1,500.00
The Charles A. Jessup Scholarship, 1879.....	1,000.00
The Mrs. Robert Means Fund, 1857.....	1,000.00

The Abraham Baldwin Olin Scholarship, 1866.....	\$1,000.00
The George H. Rosseter Scholarship, 1873.....	1,000.00
The Newton Henry Rosseter Scholarship, 1870.....	1,000.00
The Mrs. Charlotte Cone Scholarship, 1856.....	1,000.00
The Charles Stoddard Scholarship, 1866.....	1,000.00
The Emory Washburn Scholarship, 1877.....	1,000.00
The Mrs. Sarah Woodhull Arms Scholarship, 1877.....	1,000.00
The Cyrus Taggart Mills Scholarship, 1886.....	1,000.00
The Michael Edward Driscoll Fund, 1896.....	1,000.00
The George Anderson Scholarship, 1906.....	1,000.00
The John Dudley Hardy Fund, 1902.....	1,000.00
The Col. Henry Root Scholarship Fund, 1907.....	1,987.78
The Benjamin Howard Fund, 1902.....	952.50
The Ezra Starkweather Fund, 1835.....	943.60
The Franklin Marcellus Olds Fund, 1886.....	700.00
The Charles Merriam Scholarship, 1860.....	550.00
The J. Barker and Brothers Scholarship, 1856.....	500.00
The W. W. Mason Scholarship, 1856.....	500.00
The B. F. Bancroft Scholarship, 1856.....	500.00
The Bela Peck Williams Scholarship, 1859.....	500.00
The Thomas W. Williams Scholarship, 1859.....	500.00
The John Tatlock, Jr., Fund, 1892.....	500.00
The Charles Andrews Heath Fund, 1897.....	500.00
The Ira Jewett Geer Fund, 1902.....	500.00
The Fund of the Class of 1840.....	500.00
The Fund of the Class of 1857.....	500.00
The Fund of the Class of 1860.....	450.00
The Funds of six other Classes.....	337.00
The Frank Benjamin Yates Fund, 1897.....	500.00
The Mrs. Betsey Barnes Fund, 1879.....	300.00
The Fund of the Class of 1848.....	300.00
The Fund of the Class of 1847.....	200.00
Total	\$219,982.45

The Horace F. Clark Prize Scholarship Fund of \$20,000 is not a part of the General Scholarship Fund, its income being distributed as prizes to all successful competitors without regard to their pecuniary circumstances, as is explained on page 121.

WILLIAMS COLLEGE

EXPENSES

TREASURER'S BILLS

*Tuition, \$75 per semester.....	\$150.00	\$150.00
Room charge, \$25 to \$80 per semester.....	50.00	160.00
	<u>\$200.00</u>	<u>\$310.00</u>

The following is an estimate of some of the necessary expenses for the college year:

Board, \$5.00 to \$7.00 per week, for 38 weeks...	\$190.00	\$266.00
Washing	20.00	30.00
Light	5.00	20.00
	<u>\$215.00</u>	<u>\$316.00</u>
Total, from	\$415.00	to \$626.00

In addition to these items a fee is charged for the use of apparatus and materials in connection with the following courses:

<i>Biology</i> 3-4	\$10.00		
<i>Biology</i> 5-6	6.00		
<i>Biology</i> 7-8	10.00		
<i>Chemistry</i> 1	3.00		
<i>Chemistry</i> 2	10.00	and	breakage
<i>Chemistry</i> 3-4	10.00	"	"
<i>Chemistry</i> 5	10.00	"	"
<i>Chemistry</i> 6	10.00	"	"
<i>Geology</i> 4	3.00		
<i>Physics</i> 1-2	3.00		
<i>Physics</i> 3-4	10.00		
<i>Physics</i> 5-6	10.00		

An additional charge of \$10.00 is made on the last semester bill of the Seniors to cover expenses of graduation.

Every student's bill is mailed to him at the beginning of each semester, and he is held responsible for prompt pay-

*To take effect at the beginning of the college year 1913-14; but not to affect any student who shall have entered upon his college course before the beginning of that year, the tuition of such student being \$70 for each semester.

ment, which is required in advance. In case any student fails to pay by the end of the second week after the date of the bill, he may be excluded from all college exercises. No part of a term bill will be refunded for any cause.

To the above items must be added the expense of furnishing a room, cost of text-books, and incidentals. The amount of incidental expenses depends very much on the habits of the student.

Special damage done to college property by students will be charged to them.

Those who enter on an advanced standing, unless they come from another college, pay the following sums as entrance fees, viz.: Sophomores, \$10; Juniors, \$20; Seniors, \$30.

Every student taking courses amounting to more than 16 hours per week at the beginning of any semester will be charged a supplementary fee of \$10 for the extra instruction of that semester; and every student taking courses amounting to more than 19 hours per week at the beginning of any semester will be charged a supplementary fee of \$20 for the extra instruction of that semester.

COLLEGE ROOMS

The college has eight buildings used as dormitories. There are ten triple rooms, one hundred and fifty-three double rooms, and thirty-one single rooms. These accommodate about three hundred and sixty-seven students. The buildings are heated from a central heating plant. Each man provides his own light. Each building has bath-room and toilet conveniences.

Necessary repairs are made by the college, but all additional work is at the expense of those who occupy the rooms.

There are three methods of securing rooms: by occupancy, by lot, and by application.

of a college room is held responsible for all damage done to his room.

Students who leave college at the end of the college year, as well as those who are to change from one room to another, or from a college room to a private house or a society house, must remove all furniture and other property from their rooms immediately after Commencement. Furniture not thus removed by the owner will be removed by the college employees and stored at the owner's expense. This expense will be collected of students who leave college when the property is taken away, but in cases of other students it will be charged in the next term bill. All things sent for the students during vacation should be sent in the care of the Superintendent of Buildings.

Those students who, from choice or necessity, room in town can obtain rooms at prices somewhat higher than the rates charged in college.

Descriptive lists and price lists of rooms and general information may be obtained on application to the Treasurer.

COMMONS

A college commons has been established in Currier Hall accommodating about one hundred and thirty men. Meals are served at table d'hôte rates to students availing themselves regularly of the privilege, while an à-la-carte service is also provided. In addition to the dining room, a large and attractively furnished common room is maintained.

PRIZES AWARDED AT COMMENCEMENT, 1912 THE BENEDICT PRIZES

In Latin

FIRST PRIZE—Robert Chesley Brewster.....Class of 1914
SECOND PRIZE—Arthur Newton Pack.....“ “ “
HONORABLE MENTION—Wynne Chard Stevens.....“ “ 1912

In Greek

FIRST AND SECOND PRIZES—Equally divided between
Edwin Holmes Adriance and Richard Ellsworth
WeeksClass of 1914
HONORABLE MENTION—Richmond Walker.....“ “ “

In French

FIRST PRIZE—John Richardson Miller.....Class of 1913
SECOND PRIZE—Newman Barnes Abercrombie.....“ “ “

In German

FIRST PRIZE—Thomas Ray Mather.....Class of 1913
SECOND PRIZE—William Ozmun Wyckoff.....“ “ 1914

In Mathematics

FIRST PRIZE—William Leonard Crum.....Class of 1914
SECOND PRIZE—John Dickinson Stevens.....“ “ “
HONORABLE MENTION—Samuel Scriven Evans, Jr.....“ “ “

In Natural History

FIRST PRIZE—Edward Augustus Lane.....Class of 1912
SECOND PRIZE—Manning Cromwell Field.....“ “ “

In History

FIRST PRIZE—Thomas Worth Doan.....Class of 1912
SECOND PRIZE—Sidney Leavitt Pressey.....“ “ “
HONORABLE MENTION—Francis Cogswell Wickes.....“ “ “

PRIZE FOR PRIZES

Charles Francis Hawkins.....Class of 1912

THE GRAVES PRIZES

For Essays—Class of 1912

Lee Byron Baker	Arthur Myndert Kimberly
Gilbert Wolf Gabriel	Sidney Leavitt Pressey
Charles Leslie Hedden	Frank Prentice Rand

For Excellence in Delivery

Frank Prentice Rand

THE RHETORICAL PRIZES

General Prize

Henry Greene Hotchkiss.....Class of 1913

Junior Prizes

FIRST PRIZE—William Mandeville Troy.....Class of 1913

SECOND PRIZE—Arthur James Daly.....“ “ “

Sophomore Prizes

FIRST PRIZE—Carl Joseph Austrian.....Class of 1914

SECOND PRIZE—George Emerson Haynes.....“ “ “

PRIZES FOR PRELIMINARY TO NEW ENGLAND
ORATORICAL CONTEST

FIRST PRIZE—Frank Prentice Rand.....Class of 1912

SECOND PRIZE—Stanley Mason Babson.....“ “ 1913

THE VAN VECHTEN PRIZE FOR EXTEMPORANEOUS
SPEAKING

Charles Leslie Hedden.....Class of 1912

THE DEWEY PRIZE FOR EXCELLENCE IN COMMENCE-
MENT EXERCISES

Frank Prentice Rand

THE RICE PRIZES

In Latin

FIRST PRIZE—Charles Francis Hawkins.....Class of 1912

SECOND PRIZE—Ernest Little Wakefield.....“ “ “

In Greek

FIRST PRIZE—Wynne Chard Stevens.....Class of 1912

SECOND PRIZE—Emerson Howland Swift.....“ “ “

BOOK PRIZES FROM THE RICE FUND

Gerald Louis Goldsmit.....	Class of 1914
Donald Mackenzie.....	" " "
James Pratt Rogers.....	" " "
John Douglas Miller Royal.....	" " "
Wynne Chard Stevens.....	" " 1912
Richmond Walker.....	" " 1914

THE DELANO PRIZES IN GREEK

FIRST PRIZE—Leonard Swain.....	Class of 1912
SECOND PRIZE—Charles Randall Hart.....	" " 1913
THIRD PRIZE—Percival Wilcox Whittlesey.....	" " 1912
HONORABLE MENTION—John Miguel Martinez.....	" " 1913

THE CANBY ATHLETIC PRIZE

Theodore Kendall Thurston.....	Class of 1912
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THE HORACE FRANCIS CLARK PRIZE SCHOLARSHIPS

Charles Francis Hawkins.....	Class of 1912
Charles Leslie Hedden.....	" " "

THE LATHERS MEDAL AND PRIZE

Not awarded

THE DAVID AMES WELLS PRIZE

Not awarded

THE ADRIANCE PRIZE IN CHEMISTRY

Charles Francis Hawkins.....	Class of 1912
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PRIZE FOR FRESHMAN DECLAMATION CONTEST

FIRST PRIZE—Frank Angelo MacNamee, Jr.....	Class of 1915
SECOND PRIZE—James Fay Newton.....	" " "

PHILADELPHIA 1895 ALUMNI CUP

Robert Joseph Hamerschlag.....	Class of 1915
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WILLIAMS COLLEGE GREEK FELLOWSHIP

Emerson Howland Swift.....	Class of 1912
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HONORS AWARDED AT COMMENCEMENT, 1912

SENIOR HIGHEST CLASS HONORS

Charles Francis Hawkins

GENERAL FINAL HONORS

Charles Francis Hawkins

FINAL HONORS IN SPECIAL FIELDS

Charles Francis Hawkins—*Chemistry, Latin, Mathematics*

Perry Raymond Foster Marshall—*Chemistry*

Leonard Swain—*Latin*

Theodore Kendall Thurston—*German, Philosophy*

Ernest Little Wakefield—*Chemistry, Latin*

JUNIOR HONORS

Thomas Ray Mather

HOLDERS OF SCHOLARSHIPS

SENIORS, JUNIORS, AND SOPHOMORES, CLASSES OF 1912, 1913, AND 1914

The following list of holders of scholarships is considered an "honor list." It includes the names of none who have not been in college for at least a year, and of none who failed to reach at least the grade of C for the last semester. It therefore excludes the names of all Freshmen and other new students, though they may be receiving the pecuniary advantages of scholarships.

It excludes also the names of a few students who hold scholarships by special vote of the Trustees.

The list is based on the work of the last semester, as explained in section 4 on page 122.

A few scholarships are dependent upon local considerations, or personal nomination. Incumbents of such scholarships are placed in the groups which correspond to their standing, without regard to the actual value of the scholarships which they hold.

GROUP I

1913

Thomas Ray Mather

GROUP II

1913

Emil Robert Stein, Jr.

1914

Thomas Calvin Atchison

GROUP III

1914

William Leonard Crum

1915

Byron Moore Herrington

GROUP IV

1913

John Joseph Danaher
John Richardson Miller

1914

Roy Battenberg
John Dickinson Stevens

1915

Ralph Finch Palmer
Oliver James Wilson

GROUP V

1913

Newman Barnes Abercrombie
William Boynton
Holland Coffin
Arthur James Daly
Howard Ernest Duryea
John Beebe Gibson
George Selbie Gordon
Daniel Francis Hoar
Guy Groustein Hopper

1914

John Greer Bartram
Harold Cobb Cowell
Ernest Orville Lothrop
Jacob Chauncey Stone

1915

Raymond Curtis Bloom
George Washington Brodie, Jr.
Herbert Spencer Havens
Charles Myron Hayden
James Fay Newton
Louis Rudnick

APPOINTMENTS FOR COMMENCEMENT

CLASS OF 1912

PHILOSOPHICAL ORATIONS

Charles Francis Hawkins, *Φ. B. K.* Leonard Swain, *Φ. B. K.*
Charles Leslie Hedden, *Φ. B. K.* Theodore Kendall Thurston, *Φ. B. K.*
Ernest Little Wakefield, *Φ. B. K.*

ORATIONS

Charles Julius Bauerle, Jr., *Φ. B. K.* Clyde Cante McDuffie, *Φ. B. K.*
Thomas Worth Doan, *Φ. B. K.* Sydney Leavitt Pressey, *Φ. B. K.*
George Lec Trumbull, *Φ. B. K.*

DISSERTATIONS

Gerald Hyde Beard, <i>Φ. B. K.</i>	Ernest Boynton Patten, <i>Φ. B. K.</i>
Charles Bennett Cook	John Wells Rahill
Manning Cromwell Field	Frank Prentice Rand
Donald Leal Greenleaf, <i>Φ. B. K.</i>	Ronald Fabius Webster, <i>Φ. B. K.</i>
Francis Cogswell Wickes	

DEGREES CONFERRED IN 1912

DEGREES IN COURSE

BACHELOR OF ARTS

Charles Albert Anderson	Arthur Myndert Kimberly
Clifford Hogencamp Ayres	James Ernest King
Lee Byron Baker	Herbert Clement Klipstein
Edward Rice Bartlett	Edward Augustus Lane
Loyd Hayward Bartlett	Alan Leggett
Charles Julius Bauerle	Albert Munger Lewis
Gerald Hyde Beard	Fred Edward Linder
Lyndon Smith Beardslee	William McCredie
Brace Bennitt	Clyde Cantey McDuffie
Morris Everett Bumpus	Charles Kirk McFarlin
Benjamin Brown Burton	Perry Raymond Foster Marshall
Thomas Harrison Card	Harry Perry Martin
Jay Wilbur Chapman	John Dusenbury Matz
Lewis Winthrop Comstock	Alexander Hill Neagle
Frederick Conger	Paul Franklin Otis
Charles Bennett Cook	Ernest Boynton Patten
Clarence Mannington Cossum	Lawrence Wood Peirson
Clyde Huxster Crawford	Sydney Leavitt Pressey
Thomas Worth Doan	Kenneth Talbot Price
Manning Cromwell Field	Maxon How Pulford
Walter Cleveland Fried	Frank Prentice Rand
Gilbert Wolf Gabriel	John Wells Rahill
Ryerson Dudley Gates, Jr.	Albert Cleveland Reed
Lewis Foster Gifford	Edwin Joseph Rogers
Richard Gildersleeve	Rush Hawkins Rogers
John Calvin Goddard, Jr.	Robert Winthrop Seeley
Gustave Philip Grabfield	Walter Adams Shaw
Donald Leal Greenleaf	Robert Deyo Sherman
Durand Appleton Hall	Charles Howell Shons
Bradford Hathaway	George Franklin Simson
Charles Francis Hawkins	Roger Vinton Snow
Charles Leslie Hedden	Wynne Chard Stevens
Howard Townsend Heister	Frank Livingood Surls
Charles Winthrop Hosley	Leonard Swain
Wolcott Hubbell	Emerson Howland Swift
Branton Holstein Kellogg	Robert Wendell Taylor

Theodore Kendall Thurston	Ronald Fabius Webster
Frank Bosworth Tiebout	Bryant Davis Wetherell
James Foster Townsend	Francis Cogswell Wickes
George Lee Trumbull	Clifford Henry White
Leslie Marshall Vandeusen	Allan Griffith Whittemore
Robert Frederick Curt	Clarence Stuart Alexander
	von Witzleben Williams
Ernest Little Wakefield	William Hutcheson Windom
Kenneth Buchanan Wallace	

MASTER OF ARTS

Lansing Bartlett Bloom	Ernest Salisbury Suffern
Winthrop Davenport Foster	Donald Skeeel Tucker

HONORARY DEGREES

MASTER OF ARTS

Edgar Willey Ames	William Justus Boies
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DOCTOR OF DIVINITY

Henry Thomas Perry	William Henry Sanders
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DOCTOR OF LETTERS

Owen Wister

DOCTOR OF LAWS

Henry Lee Higginson	Oliver Wendell Holmes
Alexander Meiklejohn	

STUDENTS

CANDIDATES (IN RESIDENCE) FOR THE DEGREE OF MASTER OF ARTS

Charles Julius Bauerle, Jr., B.A., 1912, Bloomfield, N. J.
Chemistry Biology

Thomas Worth Doan, B.A., 1912, Richmond, Ind.
Government Economics

Lewis Cuddeback Merritt, 1913, Goshen, N. Y.
Philosophy History

Percival Wilcox Whittlesey, 1913, Middletown, Conn.
Greek Philosophy

SENIORS—CLASS OF 1913

Newman Barnes Abercrombie	<i>Windsor</i>	7 E. C.
Walter Byron Adams	<i>Geneseo, N. Y.</i>	Δ. T. House
Stanley Mason Babson	<i>South Orange, N. J.</i>	Pilgrim Inn
Henry Raymond Bacon	<i>Pittsfield</i>	Δ. Z. A. House
Henry Ward Banks, 3d	<i>New York, N. Y.</i>	K. A. Lodge
Alfred Clarke Bedford	<i>Brooklyn, N. Y.</i>	St. Anthony Hall
Samuel Sholes Berger	<i>Fredericksburg, Va.</i>	176 Main st.
Ronald Fletcher Bogle	<i>Wappingers Falls, N. Y.</i>	Θ. Δ. X. House
Donald Flagg Bowen	<i>Providence, R. I.</i>	9 W. C.
John Alden Bower	<i>Chouteau, Mont.</i>	31 M. H.
William Boynton	<i>St. Johnsbury, Vt.</i>	Φ. Z. K. House
Leslie Kenneth Bradley	<i>New York, N. Y.</i>	K. A. Lodge
Cyrus Perrin Brown, Jr.	<i>Providence, R. I.</i>	Θ. Δ. X. House
Simmons Brown	<i>Portland, Me.</i>	K. A. Lodge
James Philip Cahen, Jr.	<i>New York, N. Y.</i>	157 Main st.
James Francis Carroll	<i>Troy, N. Y.</i>	Δ. T. House
William Brown Clarkson	<i>Brooklyn, N. Y.</i>	11 W. C.
Holland Coffin	<i>Northboro</i>	15 B. H.
Robert Crane	<i>Pelham Manor, N. Y.</i>	Σ. Φ. Place
Burton Sargeant Dake	<i>Cleveland, O.</i>	Δ. T. House
Arthur James Daly	<i>New York, N. Y.</i>	Δ. Z. A. House
Henry Trumbull Dana	<i>Philadelphia, Pa.</i>	Δ. K. E. House
John Joseph Danaher	<i>Williamstown</i>	46 Meacham St.
George Allen Davis, Jr.	<i>Lancaster, N. Y.</i>	Φ. Z. K. House
Henry Dearborn	<i>Rye, N. Y.</i>	Δ. Δ. Φ. House
Eugene Hoyne de Bronkart	<i>Chicago, Ill.</i>	X. Φ. Lodge
Guy Eugene de Lagerberg	<i>Passaic, N. J.</i>	16 W. C.
John Clarke Dewey, Jr.	<i>Worcester</i>	K. A. Lodge
John Owen Stearns Edwards	<i>Elizabeth, N. J.</i>	39 W. H.

LIST OF ABBREVIATIONS

The following abbreviations are used in the addresses of students :

B. H.	Berkshire Hall	M. H.	Morgan Hall
C. H.	College Hall	T. B. L.	Thompson Biological Laboratory
Cr. H.	Currier Hall	T. C. L.	Thompson Chemical Laboratory
E. C.	East College	T. P. L.	Thompson Physical Laboratory
F. H.	Fayerweather Hall	W. C.	West College
J. H.	Jesup Hall	W. H.	Williams Hall

Beverley Montagu Eyre	<i>Stapleton, N. Y.</i>	Φ. Σ. K. House
William Hinrichs Field	<i>Brooklyn, N. Y.</i>	St. Anthony Hall
Richard Starbuck Fielding	<i>Glens Falls, N. Y.</i>	Z. Ψ. House
Irving Duncan Fish	<i>Minneapolis, Minn.</i>	Σ. Φ. Place
Talbot Flanders	<i>Brookline</i>	A. Z. A. House
Loren Albert Fletcher	<i>Blue Island, Ill.</i>	Z. Ψ. House
John Eliot Fowler	<i>Bridgeport, Conn.</i>	Σ. Φ. Place
Edward Livingston Freeman	<i>Central Falls, R. I.</i>	Θ. Δ. X. House
John Beebe Gibson	<i>Waterloo, N. Y.</i>	A. Z. A. House
Huntington Gilchrist	<i>Auburn, N. Y.</i>	K. A. Lodge
George Selbie Gordon	<i>Williamstown</i>	31 Southworth St.
Julian Delamater Hamlin	<i>Chicago, Ill.</i>	Φ. Δ. Θ. House
Charles Randall Hart	<i>Buffalo, N. Y.</i>	4 F. H.
Frederic Armitage Hewat	<i>Briggsville</i>	12 F. H.
Frederick Clowes Hewlett	<i>Merrick, N. Y.</i>	Φ. Σ. K. House
Philip Butler Heywood	<i>Worcester</i>	Z. Ψ. House
Daniel Francis Hoar	<i>Troy, N. Y.</i>	19 E. C.
Guy Groustine Hopper	<i>Williamstown</i>	81 Cole Ave.
Henry Greene Hotchkiss	<i>New York, N. Y.</i>	St. Anthony Hall
John Tasker Howard, Jr.	<i>Williamstown</i>	27 Hoxsey St.
John Platt Hubbell	<i>Garden City, N. Y.</i>	Δ. K. E. House
Chester Morse Jones	<i>Newton Center</i>	Φ. Δ. Θ. House
Willis Webster Judd	<i>Chicago, Ill.</i>	10 W. C.
Frank Sampson Kelley	<i>Chatham, N. J.</i>	33 M. H.
Warren Post Kortright	<i>Huntington, N. Y.</i>	5 W. C.
Josiah Lasell	<i>Whitinsville</i>	A. Δ. Φ. House
Loran Lodowick Lewis, 3d	<i>Buffalo, N. Y.</i>	A. Δ. Φ. House
Richard Vaughan Lewis, Jr.	<i>Irvington, N. Y.</i>	A. Δ. Φ. House
Ceylon Arthur Lyman	<i>Minneapolis, Minn.</i>	K. A. Lodge
John Aeneas Mackenzie	<i>Lexington</i>	12 F. H.
Roderick MacLeod	<i>Newport, R. I.</i>	Δ. Δ. House
John Miguel Martinez	<i>New York, N. Y.</i>	St. Anthony Hall
Thomas Ray Mather	<i>Benton, Pa.</i>	19 E. C.
Frederic Woehler Mears	<i>Williamstown</i>	Argilla
John Harbeck Meeker	<i>East Orange, N. J.</i>	A. Z. A. House
Frederic Arnold Merrill	<i>Dorchester</i>	A. Δ. Φ. House
Lewis Cuddeback Merritt	<i>Goshen, N. Y.</i>	129 Main St.
Sidney Morris Michael	<i>Buffalo, N. Y.</i>	X. Ψ. Lodge
John Richardson Miller	<i>Leominster</i>	10 F. H.
Charles Nelson Mortenson	<i>Oak Park, Ill.</i>	Ψ. Ω. House
Francis Stetson Mygatt	<i>New York, N. Y.</i>	A. Δ. Φ. House
Henry Siller Narten	<i>Cleveland, O.</i>	X. Ψ. Lodge

Edgar Joshua Nathan, Jr.	New York, N. Y.	11 F. H.
Robert Elkan Naumburg	New York, N. Y.	18 B. H.
John Kewley Henshaw Nightingale, Jr.	Providence, R. I.	11 W. C.
Thomas Raymond Nusbickel	Lyons, N. Y.	Δ. T. House
Jerome Foote Page	Batavia, N. Y.	X. Ψ. Lodge
Carle Lawyer Parsons	Binghamton, N. Y.	Z. Ψ. House
Osgood Perry	Fitchburg	Δ. T. House
Charles Swayne Phillips	Upper Montclair, N. J.	Δ. K. E. House
Dwight Copley Pitcher	Utica, N. Y.	12 W. C.
Edward Merriam Powell	Grand Rapids, Mich.	Δ. Δ. House
Schuyler Pratt	Tacoma, Wash.	10 W. C.
John Guy Prindle	Williamstown	31 Southworth St.
Wallace Rand, Jr.	Brookline	A. Z. A. House
William Thompson Rice	Pittsfield	Δ. K. E. House
John Harold Robinson	Kansas City, Mo.	Z. Ψ. House
Laurence Rothfeld	New York, N. Y.	25 B. H.
Allen Manvel Schauffler	Highland Park, Ill.	22 J. H.
Winthrop Lawrence Sheedy	Groton	Φ. Σ. K. House
George Marsden Shipton	Pittsfield	A. Z. A. House
Livingston Lyman Short	Williamstown	St. Anthony Hall
Irving Frederick Smith	Watertown, Conn.	Ψ. Ω. House
Merritt Haviland Smith, Jr.	New York, N. Y.	Θ. Δ. X. House
James Darrow Standish, Jr.	Detroit, Mich.	K. A. Lodge
Emil Robert Stein, Jr.	North Adams	North Adams
Joseph Kiddoo Surls	Williamstown	20 Glen Road
Arthur Lessner Swift, Jr.	New York, N. Y.	31 M. H.
Charles Stanley Thompson	Minneapolis, Minn.	St. Anthony Hall
Oliver Wolcott Toll	Denver, Col.	Δ. Δ. House
George Wheeler Trevor	Buffalo, N. Y.	Z. Ψ. House
William Mandeville Troy	Williamstown	4 Adams Block
Charles Bach Utley	Buffalo, N. Y.	Ψ. Ω. House
Frederick Albert Viotor	New York, N. Y.	A. Δ. Φ. House
James Monroe Walker	Chicago, Ill.	9 W. C.
Augustus Cuddeback Wallace	Goshen, N. Y.	33 M. H.
Stirling Davies Ward	East Orange, N. J.	23 B. H.
Edward Richmond Ware	New York, N. Y.	St. Anthony Hall
Lawrence Charles Wellington	Amherst	Δ. Δ. House
Percival Wilcox Whittlesey	Middletown, Conn.	12 W. C.
Edward Higginson Williams, III	Woodstock, Vt.	Δ. A. House
Paul Stuart Winslow	River Forest, Ill.	St. Anthony Hall
Walter Halsey Young	New Rochelle, N. Y.	Φ. Δ. Θ. House

Total 112

JUNIORS—CLASS OF 1914

Frank Prouty Abbott	<i>Goshen, Ind.</i>	A. Δ. Φ. House
Waldemar Patterson Adams	<i>Portland, Me.</i>	X. Ψ. Lodge
Edwin Holmes Adriance	<i>New York, N. Y.</i>	24 W. H.
Harris Ely Adriance, Jr.	<i>New York, N. Y.</i>	24 W. H.
Rutherford Oakes Ainslie	<i>Oak Park, Ill.</i>	24 W. H.
Columbus Delano Ames	<i>Baltimore, Md.</i>	St. Anthony Hall
John Ure Anderson	<i>Youngstown, O.</i>	Δ. T. House
Thomas Calvin Atchison	<i>Lawrence</i>	24 E. C.
Carl Joseph Austrian	<i>New York, N. Y.</i>	8 F. H.
John Greer Bartram	<i>Lakeville, Conn.</i>	9 E. C.
Roy Battenberg	<i>Scranton, Pa.</i>	7 & 8 B. H.
James Phinney Baxter, 3d	<i>Portland, Me.</i>	K. A. Lodge
Eric McCoy Beach	<i>Orange, N. J.</i>	Φ. Σ. K. House
John David Campbell	<i>Williamstown</i>	Δ. K. E. House
Rodman Wright Chamberlain	<i>New Britain, Conn.</i>	4 M. H.
John Hallett Clark, Jr.	<i>Alberta, Canada</i>	Δ. K. E. House
Freeman Clarkson, Jr.	<i>Brooklyn, N. Y.</i>	A. Z. A. House
Joseph Plumb Cochran	<i>Minneapolis, Minn.</i>	A. Z. A. House
Sanford Corey	<i>Portland, Me.</i>	12 B. H.
Harold Cobb Cowell	<i>Ashburnham</i>	A. Z. A. House
Ridgway Miller Cravens	<i>Williamstown</i>	22 B. H.
William Anderson Crosby	<i>La Crosse, Wis.</i>	7 & 8 B. H.
William Leonard Crum	<i>North Adams</i>	North Adams
George Terry Curtis	<i>Plattsburgh, N. Y.</i>	Φ. Σ. K. House
Theodore Hamilton Dauchy	<i>Brooklyn, N. Y.</i>	X. Ψ. Lodge
John Goldthwait Davis	<i>Brookline</i>	X. Ψ. Lodge
Charles Airmet DeLand, Jr.	<i>Warren</i>	30 M. H.
Ashley Weed Dickinson	<i>Duluth, Minn.</i>	Z. Ψ. House
Norman Duffield	<i>Troy, N. Y.</i>	A. Z. A. House
Howard Ernest Duryea	<i>Williamstown</i>	Φ. Σ. K. House
Charles Franklyn Ely	<i>Westfield</i>	Φ. Δ. Θ. House
Samuel Scriven Evans, Jr.	<i>Paterson, N. J.</i>	Ψ. Ω. House
Herbert Edward Field	<i>Providence, R. I.</i>	16 W. C.
Stephen Luther French	<i>Fall River</i>	Θ. Δ. X. House
Alfred Warren Gale	<i>Troy, N. Y.</i>	10 M. H.
Mason Garfield	<i>Williamstown</i>	7 M. H.
Joseph White Geer	<i>New York, N. Y.</i>	St. Anthony Hall
Fletcher Ladd Gill	<i>West Newton</i>	Θ. Δ. X. House

John Westfield Gillette, Jr.	Hudson, N. Y.	A, F. H.
Carl Edward Glock	Johnstown, Pa.	Ψ. Ω. House
Gerald Louis Goldsmit	Pittsburgh, Pa.	3 B. H.
Edwin Saffen Graham	New York, N. Y.	28 M. H.
James Thomas Greene	Slatersville, R. I.	Θ. Δ. X. House
Henry Tracy Hale	Towanda, Pa.	Z. Ψ. House
Stockton Harter	Canton, O.	Θ. Δ. X. House
George Emerson Haynes	Adams	7 F. H.
Allston Headley	Albany, N. Y.	St. Anthony Hall
James Frederic Herrick	New York, N. Y.	28 B. H.
George William Higinbotham	Victor, N. Y.	Z. Ψ. House
Walter Mills Hinkle	New York, N. Y.	7 F. H.
Paul Hull Hyde	Wichita, Kan.	Θ. Δ. X. House
Robert Rollin Jewett	Aberdeen, S. D.	K. A. Lodge
Walter Erwin Johnson	Wolcott, N. Y.	A. Z. A. House
David Gale Jones	Minneapolis, Minn.	X. Ψ. Lodge
Herbert Du Noyer Jones	Brooklyn, N. Y.	Z. Ψ. House
Lawrence Albert Kohn	New York, N. Y.	17 B. H.
Henry Manchester Ladd, Jr.	Rutherford, N. J.	Δ. T. House
Meredith Clearman Laffey	Newark, N. J.	8 M. H.
John Howard Lawson	New York, N. Y.	10 B. H.
Charles Willard Lester	Saratoga Springs, N. Y.	Φ. Δ. Θ. House
Henry Martyn Lester, Jr.	New Rochelle, N. Y.	Φ. Σ. K. House
George Joseph Levi	New York, N. Y.	7 Spring St.
Edward Converse Lincoln	Springfield	7 M. H.
Kenneth Chandler Lincoln	Fall River	12 B. H.
Robert Davis Longyear	Minneapolis, Minn.	Ψ. Ω. House
Ernest Orville Lothrop	Leominster	7 E. C.
Francis Robbins McCook	Steubenville, O.	Δ. K. E. House
Donald Sage Mackay	New York, N. Y.	Δ. Δ. House
Donald Mackenzie	Flushing, N. Y.	30 M. H.
Frederick Whittlesey McKown	Rochester, N. Y.	9 B. H.
James McKown, Jr.	Rochester, N. Y.	7 B. H.
Edwin Sidley McManus	New York, N. Y.	5 M. H.
Charles Martin Marchand	Canton, O.	Θ. Δ. X. House
Jerome Eisman Markstein	Binghamton, N. Y.	3 B. H.
William Pitt Mason, Jr.	Troy, N. Y.	K. A. Lodge
Edwin Post Maynard, Jr.	Brooklyn, N. Y.	St. Anthony Hall
David Moffat	Brooklyn, N. Y.	Z. Ψ. House
Willson Bridges Moody	Evanston, Ill.	Z. Ψ. House
John Chapin Mosher	Albany, N. Y.	10 B. H.
Robert Ray Newton	Lenox	Ψ. Ω. House

Addison Hurlbutt Northrop	Norwich, Conn.	Θ. Δ. X. House
Arthur Newton Pack	Lakewood, N. J.	Ψ. Ω. House
Lucien Dean Pearson	Hartford, Conn.	Δ. Δ. House
Reginald Dwight Perry	Fitchburg	Δ. T. House
Charles Blanchard Phelps, Jr.	Detroit, Mich.	K. A. Lodge
Alfred Perkins Pillsbury	Springfield	Σ. Φ. Place
Joseph Douglas Porter	Cincinnati, O.	Φ. Σ. K. House
Leonard Sidney Prince	New York, N. Y.	20 F. H.
David James Robison	Toledo, O.	Δ. Δ. House
Albert Wright Rockwood	West Medford	9 E. C.
James Pratt Rogers	New Britain, Conn.	A. Z. A. House
John Stanton Rogers	New York, N. Y.	5 F. H.
John Douglas Miller Royal	Harrisburg, Pa.	Ψ. Ω. House
John Lazear Sly	Warwick, N. Y.	5 W. C.
Francis Seifert Smith, Jr.	Waban	Σ. Φ. Place
George William Smith	White River Jc., Vt.	Σ. Φ. Place
Lewis Holman Smith	Washington, Conn.	A. Z. A. House
Woodruff Smith	Brooklyn, N. Y.	37 M. H.
Robert Parker Staats	New York, N. Y.	Φ. Δ. Θ. House
John Dickinson Stevens	Lee	Φ. Σ. K. House
Jacob Chauncey Stone	North Adams	11 E. C.
Luke Garretson Thomas	New York, N. Y.	Δ. Δ. House
Edward Hatch Titus, Jr.	Closter, N. J.	Φ. Δ. Θ. House
John Dunham Townsend	New York, N. Y.	X. Ψ. Lodge
William Bradford Turner	Boston	K. A. Lodge
Clinton Spooner Van Cise	Summit, N. J.	Φ. Σ. K. House
Durand Halsey Van Doren	East Orange, N. J.	10 B. H.
James Taylor Van Steenberg	Douglaston, N. Y.	Δ. T. House
Calvin Pitts Vary	Newark, N. Y.	X. Ψ. Lodge
Albert Vinal	Newton Center	Σ. Φ. House
Webb Isaiah Vorys	Columbus, O.	X. Ψ. Lodge
Richmond Walker	Brookline	4 M. H.
Richard Ellsworth Weeks	Shelburne, Vt.	Δ. K. E. House
Harvey Elijah Wellman	Providence, R. I.	8 M. H.
William Luke Wessels	Amsterdam, N. Y.	Φ. Σ. K. House
Lawrence Baker Woodard	Minneapolis, Minn.	Θ. Δ. X. House
William Ozmun Wyckoff	Ithaca, N. Y.	X. Ψ. Lodge
Samuel Dow Wyman	Pittsfield	Φ. Δ. Θ. House

Total 118

SOPHOMORES—CLASS OF 1915

Clarence Cutler Abbott	<i>New York, N. Y.</i>	X. ♀. Lodge
Harold Manning Adams	<i>Weedsport, N. Y.</i>	22 E. C.
Arthur Allan Andrews	<i>Canandaigua, N. Y.</i>	13 & 14 B. H.
William Russell Augur	<i>Brooklyn, N. Y.</i>	22 E. C.
Philip Stanley Barnes	<i>Plymouth</i>	19 B. H.
Gerhard Frederick Behre	<i>New Canaan, Conn.</i>	Φ. E. K. House
Franklin Edwards Bernstein	<i>East Orange, N. J.</i>	1 E. C.
Raymond Curtis Bloom	<i>Auburn, N. Y.</i>	29 B. H.
William Booth	<i>Sewickley, Pa.</i>	18 E. C.
Edgar Willis Bowne	<i>Flushing, N. Y.</i>	Φ. Δ. Θ. House
Charles William Brackett	<i>Saratoga Springs, N. Y.</i>	Δ. Δ. House
Barron Brainerd	<i>Brookline</i>	32 M. H.
William Rancette Brock	<i>Paterson, N. J.</i>	16 E. C.
George Washington Brodie, Jr.	<i>Ozone Park, N. Y.</i>	13 B. H.
Walter Carlos Bronson	<i>Ottawa, Canada</i>	29 M. H.
Cornelius Merrill Brown	<i>Matawan, N. J.</i>	Δ. T. House
Eugene Maurice Cole	<i>Plattsburgh, N. Y.</i>	11 M. H.
Howard Chappel Cole	<i>Plattsburgh, N. Y.</i>	11 M. H.
Peter Fries Connor	<i>Rock Island, Ill.</i>	1 B. H.
Donald Crane	<i>Pelham Manor, N. Y.</i>	Σ. Φ. Place
Douglas Cumbrae Crawford	<i>Kent, Conn.</i>	40 W. H.
Conrad Ford Cutler	<i>Mt. Hermon</i>	12 E. C.
Wolfram Charles Franklin Day	<i>New York, N. Y.</i>	7 W. H.
Elliott Debevoise	<i>South Orange, N. J.</i>	17 W. H.
John Martin Deely	<i>Lee</i>	13 B. H.
Ira Millard Dempsey	<i>Johnstown, Pa.</i>	21 W. H.
David Short Dennison	<i>Youngstown, O.</i>	Δ. T. House
Franklin Clyde Doane	<i>Plainfield, N. J.</i>	Δ. T. House
Keith Francis Driscoll	<i>Syracuse, N. Y.</i>	23 W. H.
Norman Delafield DuBois	<i>Montclair, N. J.</i>	Σ. Φ. Place
Errien Clark Eaton	<i>Detroit, Mich.</i>	18 W. H.
Howard Parmelee Eells, Jr.	<i>Cleveland, O.</i>	37 W. H.
Steuart MacKie Emery	<i>Morristown, N. Y.</i>	Σ. Φ. Place
George Goodman Ernst	<i>New York, N. Y.</i>	17 F. H.
Willis Ward Fay	<i>Auburn, N. Y.</i>	13 W. H.
John William Ferguson, Jr.	<i>Paterson, N. J.</i>	35 M. H.
Lyman Sheridan Frazier	<i>Amsterdam, N. Y.</i>	10 M. H.
Herbert Lincoln Frink	<i>Holyoke</i>	3 W. H.

Thomas Foster Furness	Brookline	12 M. H.
John Newell Garfield	West Mentor, O.	37 W. H.
John Wily Garrett, 2d	St. Louis, Mo.	7 W. C.
Russell Bare Garver	Roaring Spring, Pa.	4 B. H.
John Mason Gilchrist	Auburn, N. Y.	34 M. H.
Roger Morton Gildersleeve	Poughkeepsie, N. Y.	4 W. C.
Randolph Wyman Gleason	Lowell	13 M. H.
Robert Noble Taber Golding	New York, N. Y.	3 W. H.
Robert Julius Goldman	New York, N. Y.	27 B. H.
David Gilbert Gregor	Watertown, N. Y.	7 W. C.
Charles Blake Hall	Orange, N. J.	29 M. H.
Robert Joseph Hamerslag	New York, N. Y.	20 B. H.
Herbert Spencer Havens	Tivoli, N. Y.	Φ. Δ. Θ. House
Charles Myron Hayden	Housatonic	6 E. C.
Ernest Myers Hedden	Newark, N. J.	12 M. H.
Byron Moore Herrington	Greenwich, N. Y.	20 E. C.
Karl Hofmann Hodge	St. Louis, Mo.	Φ. Δ. Θ. House
Richard Hallaran Hodge	Toledo, O.	5 E. C.
Herbert Roy Horton	Albany, N. Y.	1 E. C.
George Loring Hubbell, Jr.	Garden City, N. Y.	22 W. H.
George Alvin Hyde	Wichita, Kan.	29 W. H.
Jack Butler Johnstone	New York, N. Y.	13 W. H.
Daniel Schneck Keller	Lancaster, Pa.	24 E. C.
Morris James Kidder	Essex Junction, Vt.	6 E. C.
George King	New York, N. Y.	10 W. H.
Henry Randolph Knowlton	New York, N. Y.	38 M. H.
Thomas Alexander Langford	New York, N. Y.	17 W. H.
Gillet Lefferts	Newark, N. J.	St. Anthony Hall
Norman Hillard MacLeish	Glencoe, Ill.	4 W. C.
Frank Angelo MacNamee, Jr.	Albany, N. Y.	40 W. H.
Charles Rust Macpherson	Saginaw, Mich.	2 B. H.
Gordon Hunt Michler	Greenwich, Conn.	1 B. H.
Ellis Monroe	Yonkers, N. Y.	6 F. H.
Barry Lincoln Morgan	Elgin, Ill.	20 E. C.
Edwin Gates Nash	Nettleton, Ark.	Δ. Δ. House
James Fay Newton	Fulton, N. Y.	3 E. C.
Joseph Aloysius Fizez O'Brien	Bennington, Vt.	12 Thomas St.
Charles Frederic Olmsted, Jr.	Grand View, Tenn.	15 B. H.
Franklin Fessenden Olmsted	Rhinebeck, N. Y.	30 B. H.
Ralph Finch Palmer	Brooklyn, N. Y.	21 B. H.
Edgar Burnside Parsons	Binghamton, N. Y.	8 W. C.
Andrew Fleming Patterson	New York, N. Y.	19 W. H.

Edward Erskine Porter	Brooklyn, N. Y.	21 W. H.
Philip Childs Potter	Spuyten Duyvil, N. Y.	St. Anthony Hall
George Stephen Potwine	East Windsor, Conn.	3 F. H.
Dwight Harold Pratt	Cincinnati, O.	18 E. C.
Henry Townsend Pratt	Milwaukee, Wis.	25 M. H.
David Remer	New York, N. Y.	5 W. H.
Francis Russell Rising	Lancaster, O.	X. Ψ. Lodge
Charles Henry Robinson, Jr.	Portland, Me.	28 M. H.
Tracy Lesman Rothfeld	New York, N. Y.	20 F. H.
Louis Rudnick	Williamstown	127 Cole Ave.
Clinton Whitcomb Sheaffer	Pottsville, Pa.	Φ. Δ. Θ. House
Robert McCormick Shields	Highland Park, Ill.	2 W. C.
Alfred Shriver	New Brighton, N. Y.	Φ. Δ. Θ. House
Andrew Raymond Smith	Bridgeport, Conn.	Z. Ψ. House
Bruce Messer Smith	Pittsfield	5 E. C.
Harold Allen Spring	Franklinville, N. Y.	36 M. H.
Thomas Stuart Squire	Buffalo, N. Y.	32 M. H.
Robert Burrough Swain	Pomfret, Conn.	38 M. H.
Wallace Bradley Thompson	Orange, N. J.	8 E. C.
Joseph Haas Titus	Pittsfield	37 M. H.
Mason Turner	Torrington, Conn.	15 W. H.
John Cowperthwait Tyler	Brooklyn, N. Y.	20 W. H.
Rudolf deLuce van Hovenberg	Kingston, N. Y.	Δ. Δ. House
George Whitfield Van Slyck	Providence, R. I.	19 W. H.
Rowland Westcott Waterbury	Saratoga Springs, N. Y.	25 M. H.
Albert Perry Waterman, Jr.	Orange, N. J.	3 E. C.
Paul Brown West	Glens Falls, N. Y.	Φ. Δ. Θ. House
John Franklin Wharton	East Orange, N. J.	21 M. H.
Kneeland Ball Wilkes	Buffalo, N. Y.	20 W. H.
Lessing Whitford Williams	New York, N. Y.	8 W. H.
Theodore Ryder Williams	Malden	14 E. C.
Oliver James Wilson	Malden	14 E. C.
Donald Winston	Minneapolis, Minn.	Φ. Δ. Θ. House
Frederick Schaefer Winston	Minneapolis, Minn.	34 M. H.
Kenneth Barrow Wood	Brooklyn, N. Y.	21 M. H.
Paul Pickering Wrigley	Brooklyn, N. Y.	17 M. H.

Total 116

FRESHMEN—CLASS OF 1916

John Hascall Abbott	<i>Goshen, Ind.</i>	A, F. H.
Ferris Marion Angevene	<i>Brookline</i>	23 E. C.
Charles Albert Atwell, Jr.	<i>Sewickley, Pa.</i>	15 W. H.
Samuel Newton Bacon	<i>Albany, N. Y.</i>	14 M. H.
Lester Roberts Badger	<i>Minneapolis, Minn.</i>	14 W. H.
Kurt William Baettenhaussen	<i>New York, N. Y.</i>	42 W. H.
Elbert Baldwin	<i>Lakewood, N. J.</i>	15 M. H.
Elbert Hyatt Bancker	<i>Brooklyn, N. Y.</i>	22 M. H.
Charles Henry Banes	<i>Philadelphia, Pa.</i>	11 Cr. H.
Stuart-Menteth Beard	<i>New York, N. Y.</i>	6 F. H.
Alfred Benjamin	<i>New York, N. Y.</i>	33 W. H.
Norman William Blanchard	<i>North Adams</i>	128 Main St.
Farnam Jay Bowen	<i>Lowville, N. Y.</i>	23 W. H.
Frank Merrill Brazier	<i>Dorchester</i>	41 W. H.
Charles Frederick Arnold Brewer	<i>Middletown, Conn.</i>	45 W. H.
Talbot Magruder Brewer	<i>New York, N. Y.</i>	6 B. H.
Addison Brown, Jr.	<i>New York, N. Y.</i>	3 M. H.
Norman Brown	<i>Portland, Me.</i>	23 F. H.
William Charles Browning	<i>New York, N. Y.</i>	13 W. C.
Donald Diehl Brumbaugh	<i>Orange, N. J.</i>	25 W. H.
Arthur Lyle Bunnell	<i>Brooklyn, N. Y.</i>	Φ. Δ. Θ. House
Areson Buchanan Burr	<i>New York, N. Y.</i>	6 M. H.
Charles Macy Bussey	<i>Troy, N. Y.</i>	2 F. H.
Gordon Wyatt Cameron	<i>Williamstown</i>	28 Hoxsey St.
William Gail Camp	<i>Buffalo, N. Y.</i>	16 F. H.
Persons LaBarre Campbell	<i>Toledo, O.</i>	18 W. H.
Ralph MacKenzie Campbell	<i>East Orange, N. J.</i>	13 M. H.
James Graham Cannon, Jr.	<i>Scarsdale, N. Y.</i>	22 W. H.
Alexander Hayward Cathcart	<i>St. Paul, Minn.</i>	8 W. C.
James Adams Cathcart	<i>St. Paul, Minn.</i>	34 W. H.
Horace Weston Chapman	<i>Bangor, Me.</i>	43 W. H.
John Churchill	<i>Carters Bridge, Va.</i>	34 W. H.
William Dearborn Clark	<i>San Francisco, Cal.</i>	43 W. H.
Caspar William Clarke	<i>Seattle, Wash.</i>	36 M. H.
Edwin Thurston Clarke	<i>Brookline</i>	48 W. H.
Douglas Rulison Coleman	<i>New York, N. Y.</i>	2 B. H.
J. de Raismes Combes	<i>Elmhurst, N. Y.</i>	6 W. C.
Theodore Brigham Conklin	<i>New Rochelle, N. Y.</i>	5 W. H.

Jack Arthur Conway	Brooklyn, N. Y.	30 W. H.
Harold Frederick Cowperthwaite	Westfield, N. J.	12 E. C.
Henry Hubbard Cutler	Mt. Hermon	4 E. C.
Herbert Reginald Davis	Ossining, N. Y.	9 F. H.
Irving Maxwell Day	Schenectady, N. Y.	35 W. H.
Cary Freeman Denny	Brooklyn, N. Y.	30 W. H.
Delano de Windt	Winnetka, Ill.	7 Spring St.
Edward William Young Dunn, Jr.	Jersey City, N. J.	14 M. H.
Hobart Bigelow Emerson	Newton	20 M. H.
George Carlton Fancher	White Plains, N. Y.	16 M. H.
George Faunce, Jr.	Carnegie, Pa.	15 W. C.
George Siemers Fayen	Montclair, N. J.	6 W. H.
George Dick Finlay, Jr.	Montclair, N. J.	38 W. H.
Henry Needham Flynt	Monson	17 Cr. H.
Herbert Carey Fowler	Mt. Vernon, N. Y.	14 F. H.
James Charles Fox, Jr.	Middletown, Conn.	22 F. H.
John Wilson Freeman	Washington, D. C.	87 Meacham St.
Herbert Nichols French	Brookline	15 Cr. H.
William Harris Funk	South Bend, Ind.	32 W. H.
James Abram Garfield	West Mentor, O.	45 W. H.
Donald Frederick Geddes	Toledo, O.	15 W. C.
Russel Mortimer Geer	West Hartford, Conn.	23 M. H.
Frederick Virginius Geier	Cincinnati, O.	9 Cr. H.
Bulkley Southworth Griffin	Springfield	47 W. H.
William Lawrence Guthrie	New York, N. Y.	11 E. C.
Claude Milton Haggerty	Holyoke	3 F. H.
Everest Denslow Haight	Brooklyn, N. Y.	9 M. H.
Herbert DeFreest Hamm	Troy, N. Y.	2 Cr. H.
George Harold Harder	Philmont, N. Y.	21 F. H.
Ira Alden Hawkins	Warwick, N. Y.	23 E. C.
Edward Marion Hay	Olympia, Wash.	1 W. C.
George McGill Hayes	Canandaigua, N. Y.	12 W. H.
Laurence Stanford Haynes	Longmeadow	4 B. H.
Charles McPherson Holt	Chicago, Ill.	47 W. H.
Sherwood Hubbell	Garden City, N. Y.	24 M. H.
Norman Frothingham Hunnewell	Winchester	X. Ψ. Lodge
James Foley Hurd	Albany, N. Y.	26 W. H.
John Goodall Hutton	Bennington, Vt.	27 Hoxsey St.
Leonard Jacob, 2d	Watertown, N. Y.	19 F. H.
Parmele Johnson	Penn Yan, N. Y.	9 F. H.
Henry Eugene Jones, Jr.	Riverside, Conn.	25 W. H.
Jay Sylvester Jones, Jr.	Brooklyn, N. Y.	4 W. H.

George Cyril Jordan	<i>Blackinton</i>	Blackinton
William Dorsey Kennedy	<i>Cleveland, O.</i>	18 M. H.
Charles David Kepner, Jr.	<i>Newtonville</i>	20 M. H.
Henry William King	<i>Alma, Mich.</i>	36 W. H.
Webster Knight, II	<i>Providence, R. I.</i>	41 W. H.
John Lippitt Ladd	<i>Providence, R. I.</i>	14 W. H.
Richard Bryan Leake, Jr.	<i>Arlington, Vt.</i>	9 M. H.
John Nestell Leonard	<i>New York, N. Y.</i>	18 F. H.
Delano Chauncey Letts	<i>Chicago, Ill.</i>	1 W. H.
Otto Emil Lohrke, Jr.	<i>East Orange, N. J.</i>	15 M. H.
Raymond Flint Long	<i>Summit, N. J.</i>	36 M. H.
Clyde Stanley Longyear	<i>Minneapolis, Minn.</i>	Ψ. Ω. House
Albert Thornton McAllister	<i>Chestnut Hill, Pa.</i>	26 W. H.
John Alan MacGruer	<i>Syracuse, N. Y.</i>	Z. Ψ. House
Sydney Newton MacInnis	<i>Pittsfield</i>	15 E. C.
Samuel Campbell McKown, Jr.	<i>Rochester, N. Y.</i>	29 W. H.
Francis Michael McMahon	<i>Pittsfield</i>	15 E. C.
Bryant McQuillen	<i>Dedham</i>	6 M. H.
Frank LeRoi Main	<i>New York, N. Y.</i>	Φ. Δ. Θ. House
Joseph Hiram Main	<i>New York, N. Y.</i>	27 Hoxsey St.
John Marshall, Jr.	<i>Anchorage, Ky.</i>	15 Cr. H.
Marcus McLemore Marshall	<i>Los Angeles, Cal.</i>	1 W. H.
Richard Stratton Maynard	<i>Brooklyn, N. Y.</i>	2 M. H.
Dudley Miller	<i>Brooklyn, N. Y.</i>	10 Cr. H.
William Lincoln Moffat, Jr.	<i>Brooklyn, N. Y.</i>	2 M. H.
Emil Henry Molthan	<i>New York, N. Y.</i>	44 W. H.
Warner Johnson Montague	<i>New York, N. Y.</i>	19 F. H.
Leonard David Newborg	<i>New York, N. Y.</i>	26 B. H.
Caryl Hammond Newell	<i>Buffalo, N. Y.</i>	16 F. H.
Edward Francis Oakes	<i>Palatine Bridge, N. Y.</i>	1 F. H.
Charles Stott Oakley, Jr.	<i>New York, N. Y.</i>	24 M. H.
Carleton Kingsley Ober	<i>White Plains, N. Y.</i>	16 M. H.
Robert Julien Oppenheimer	<i>New York, N. Y.</i>	4 Cr. H.
Schuyler Adams Orvis	<i>New York, N. Y.</i>	3 W. C.
Carlton Bynner Overton	<i>Montclair, N. J.</i>	38 W. H.
William Kennell Paton	<i>Paterson, N. J.</i>	16 E. C.
Albert Brace Pattou	<i>Yonkers, N. Y.</i>	16 Cr. H.
Harold Payne	<i>Cincinnati, O.</i>	18 M. H.
John Adams Payne, Jr.	<i>Cincinnati, O.</i>	18 M. H.
Phillips Merrill Payson	<i>Portland, Me.</i>	21 F. H.
Horace Dudley Peck	<i>New York, N. Y.</i>	2 E. C.
Elisha Barclay Powell, Jr.	<i>Oswego, N. Y.</i>	13 Cr. H.

Kent Holeman Powers	<i>Minneapolis, Minn.</i>	1 W. C.
Edward Lyndal Reed	<i>Wayne, Pa.</i>	3 W. C.
Kenneth Gray Reynolds	<i>Albany, N. Y.</i>	11 Cr. H.
William Schreuder Rhoades	<i>Brooklyn, N. Y.</i>	27 W. H.
Donald Lewis Richards	<i>Westfield</i>	5 B. H.
George Harrison Richards	<i>Winsted, Conn.</i>	32 W. H.
Richard Burton Rockwood	<i>Englewood, N. J.</i>	9 Cr. H.
Hamilton Harris Russell	<i>Seneca Falls, N. Y.</i>	12 W. H.
Joseph Jones Russell	<i>Ilion, N. Y.</i>	13 F. H.
Charles Dwight Sabin, Jr.	<i>New York, N. Y.</i>	13 W. C.
Fred Dunning Salmon	<i>Port Jervis, N. Y.</i>	13 F. H.
George Harold Schreiber	<i>North Adams</i>	North Adams
Philip Huntington Seaman	<i>Yonkers, N. Y.</i>	16 Cr. H.
Walter Eppley Seibert	<i>Baltimore, Md.</i>	10 E. C.
Paul Clements Shattuck	<i>Natick</i>	11 E. C.
Phillips Bassett Shaw	<i>Chicago, Ill.</i>	46 W. H.
Douglas Auld Shepardson	<i>Reading</i>	8 Cr. H.
Malcolm Clarke Sherwood	<i>Springfield</i>	A. A. House
Amory Standish Skerry	<i>Montclair, N. J.</i>	10 Cr. H.
Kenneth Gladstone Smith	<i>Winnetka, Ill.</i>	7 Spring St.
Sydney Reed Smith	<i>Canaan, N. Y.</i>	16 W. H.
William Boyd Sommerville, Jr.	<i>New York, N. Y.</i>	44 W. H.
Eben Selden Spencer	<i>Duluth, Minn.</i>	23 F. H.
Harry Arthur Statler	<i>Johnstown, Pa.</i>	14 F. H.
Stuart Olmstead Stearns	<i>Hartford, Conn.</i>	17 Cr. H.
John Stebbins	<i>Norwich, N. Y.</i>	8 Cr. H.
Allyn Fillmore Stetson	<i>Plattsburgh, N. Y.</i>	42 W. H.
Raymond DuBois Stickney	<i>Albany, N. Y.</i>	28 W. H.
Emerson Law Stone	<i>Waterford, N. Y.</i>	4 W. H.
Arthur Temple	<i>Texarkana, Ark.</i>	17 W. H.
Howell Kellogg Thayer	<i>Northampton</i>	23 M. H.
Frederick Tomkins	<i>New York, N. Y.</i>	48 W. H.
Cyprian Andrew Toolan	<i>North Adams</i>	11 E. C.
Thomas McIlvaine Turner	<i>New York, N. Y.</i>	14 Cr. H.
John Daire VanCott	<i>Salt Lake City, Utah</i>	2 W. H.
Albert Franklin Waterman	<i>Warren, R. I.</i>	41 W. H.
Douglas Patten Wells	<i>Chicago, Ill.</i>	35 W. H.
John Thoreau Whitmore	<i>Springfield</i>	1 M. H.
Robert Howard Whiton	<i>Brooklyn, N. Y.</i>	22 F. H.
Amory Leland Williams	<i>Woodstock, Vt.</i>	16 W. H.
Gomer John Williams	<i>Fair Haven, Vt.</i>	1 F. H.
Norman Williams	<i>Woodstock, Vt.</i>	27 W. H.

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153

Robert Warren Williams	Brooklyn, N. Y.	9	W. H.
Reginald Whitmore Windram	Boston	2	W. C.
Leonard Clark Wolcott	Highland Park, Ill.	46	W. H.
Meredith Wood	Brooklyn, N. Y.	22	M. H.
Harold Frederic Wooster	Albany, N. Y.	Δ. K. E. House	
Max Lewis Young, Jr.	New York, N. Y.	1	Cr. H.
Harry Alfred Zimmerman, Jr.	Youngstown, O.	3	M. H.
Total		171	

SUMMARY BY CLASSES

SENIORS	112
JUNIORS	118
SOPHOMORES	116
FRESHMEN	171
GRADUATE STUDENTS: RESIDENT	4
TOTAL	521

SUMMARY BY STATES

NEW YORK	213
MASSACHUSETTS	94
NEW JERSEY	43
OHIO	24
CONNECTICUT	23
ILLINOIS	21
PENNSYLVANIA	19
MINNESOTA	16
RHODE ISLAND	12
VERMONT	11
MAINE	8
MICHIGAN	6
INDIANA	4
MISSOURI	3
WASHINGTON	3
ARKANSAS	2
CALIFORNIA	2
KANSAS	2
MARYLAND	2
VIRGINIA	2
WISCONSIN	2
COLORADO	1
DISTRICT OF COLUMBIA	1

WILLIAMS COLLEGE

155

KENTUCKY	1
MONTANA	1
SOUTH DAKOTA	1
TENNESSEE	1
UTAH	1
CANADA	2
	<hr/>
TOTAL	521
	<hr/> <hr/>

ALPHABETICAL LIST OF NAMES

Abbott, Clarence Cutler, *Soph.*
Abbott, Frank Prouty, *Jr.*
Abbott, John Hascall, *Fr.*
Abercrombie, Newman Barnes, *Sr.*
Adams, Harold Manning, *Soph.*
Adams, Waldemar Patterson, *Jr.*
Adams, Walter Byron, *Sr.*
ADAMS, WILLIAM WISNER, *Trustee*
Adriance, Edwin Holmes, *Jr.*
Adriance, Harris Ely, Jr., *Jr.*
AGARD, HARRY LESLIE, *Inst.*
Ainslie, Rutherford Oakes, *Jr.*
ALLEN, SAMUEL EDWARD, *Asst. Prof.*
Ames, Columbus Delano, *Jr.*
Anderson, John Ure, *Jr.*
Andrews, Arthur Allan, *Soph.*
Angevene, Ferris Marion, *Fr.*
ATCHISON, CLYDE SHEPHERD,
Asst. Prof.
Atchison, Thomas Calvin, *Jr.*
Atwell, Charles Albert, Jr., *Fr.*
Augur, William Russell, *Soph.*
Austrian, Carl Joseph, *Jr.*
Babson, Stanley Mason, *Sr.*
Bacon, Henry Raymond, *Sr.*
Bacon, Samuel Newton, *Fr.*
Badger, Lester Roberts, *Fr.*
Baettenhaussen, Kurt William, *Fr.*
Baldwin, Elbert, *Fr.*
Bancker, Elbert Hyatt, *Fr.*
Banes, Charles Henry, *Fr.*
BANGS, ARCHIE ROY, *Inst.*
Banks, Henry Ward, 3d, *Sr.*
Barnes, Philip Stanley, *Soph.*
BARTON, FRANCIS BROWN, *Inst.*
Bartram, John Greer, *Jr.*
Battenberg, Roy, *Jr.*

BAUERLE, CHARLES JULIUS, JR.,
Asst.
Baxter, James Phinney, 3d, *Jr.*
Beach, Eric McCoy, *Jr.*
Beard, Stuart-Menteth, *Fr.*
Bedford, Alfred Clarke, *Sr.*
Behre, Gerhard Frederick, *Soph.*
Benjamin, Alfred, *Fr.*
Berger, Samuel Sholes, *Sr.*
Bernsten, Franklin Edwards, *Soph.*
BLANCHARD, JESSIE LILLIAN,
Library Asst.
Blanchard, Norman William, *Fr.*
Bloom, Raymond Curtis, *Soph.*
Bogle, Ronald Fletcher, *Sr.*
Booth, William, *Soph.*
BOTSFORD, ELI HERBERT, *Inst.*
Bowen, Donald Flagg, *Sr.*
Bowen, Farnam Jay, *Fr.*
Bower, John Alden, *Sr.*
Bowne, Edgar Willis, *Soph.*
Boynton, William, *Sr.*
Brackett, Charles William, *Soph.*
Bradley, Leslie Kenneth, *Sr.*
Brainerd, Barron, *Soph.*
Brazier, Frank Merrill, *Fr.*
Brewer, Charles Frederick Arnold,
Fr.
Brewer, Talbot Magruder, *Fr.*
Brock, William Randlette, *Soph.*
Brodie, George Washington, Jr.,
Soph.
Bronson, Walter Carlos, *Soph.*
Brown, Addison, Jr., *Fr.*
Brown, Cornelius Merrill, *Soph.*
Brown, Cyrus Perrin, Jr., *Sr.*
Brown, Norman, *Fr.*

Brown, Simmons, *Sr.*
 Browning, William Charles, *Fr.*
 Brumbaugh, Donald Diehl, *Fr.*
 BUFFINTON, ARTHUR HOWLAND,

Inst.

Bunnell, Arthur Lyle, *Fr.*
 Burr, Areson Buchanan, *Fr.*
 Bussey, Charles Macy, *Fr.*
 Cahen, James Philip, Jr., *Sr.*
 Cameron, Gordon Wyatt, *Fr.*
 Camp, William Gail, *Fr.*
 Campbell, John David, *Jr.*
 Campbell, Persons LaBarre, *Fr.*
 Campbell, Ralph MacKenzie, *Fr.*
 Cannon, James Graham, Jr., *Fr.*
 Carroll, James Francis, *Sr.*
 Cathcart, Alexander Hayward, *Fr.*
 Cathcart, James Adams, *Fr.*
 Chamberlain, Rodman Wright, *Jr.*
 Chapman, Horace Weston, *Fr.*
 CHILDS, EDWARDS HERRICK,

Alumni Visitor

Churchill, John, *Fr.*
 CLARK, DAVID TAGGART, *Asst. Prof.*
 Clark, John Hallett, Jr., *Jr.*
 Clark, William Dearborn, *Fr.*
 Clarke, Caspar William, *Fr.*
 Clarke, Edwin Thurston, *Fr.*
 CLARKE, SAMUEL FESSENDEN, *Prof.*
 Clarkson, Freeman, Jr., *Jr.*
 Clarkson, William Brown, *Sr.*
 CLELAND, HERDMAN FITZGERALD,

Prof.

Cochran, Joseph Plumb, *Jr.*
 Coffin, Holland, *Sr.*
 Cole, Eugene Maurice, *Soph.*
 Cole, Howard Chappel, *Soph.*
 Coleman, Douglas Rulison, *Fr.*
 Combes, J. de Raismes, *Fr.*
 Conklin, Theodore Brigham, *Fr.*
 Connor, Peter Fries, *Soph.*
 Conway, Jack Arthur, *Fr.*

Corey, Sanford, *Jr.*
 Cowell, Harold Cobb, *Jr.*
 Cowperthwaite, Harold Frederick,

Fr.

Crane, Donald, *Soph.*
 Crane, Robert, *Sr.*
 Cravens, Ridgway Miller, *Jr.*
 Crawford, Douglas Cumbræ, *Soph.*
 Crosby, William Anderson, *Jr.*
 CRU, ALBERT LOUIS, *Inst.*
 CRU, JEAN NORTON, *Inst.*
 Crum, William Leonard, *Jr.*
 Curtis, George Terry, *Jr.*
 Cutler, Conrad Ford, *Soph.*
 Cutler, Henry Hubbard, *Fr.*
 Dake, Burton Sargeant, *Sr.*
 DAKE, CHARLES LAURENCE, *Asst.*
 Daly, Arthur James, *Sr.*
 DAME, ALFRED MITCHELL, *Inst.*
 Dana, Henry Trumbull, *Sr.*
 Danaher, John Joseph, *Sr.*
 Dauchy, Theodore Hamilton, *Jr.*
 Davis, George Allen, Jr., *Sr.*
 Davis, Herbert Reginald, *Fr.*
 Davis, John Goldthwait, *Jr.*
 Day, Irving Maxwell, *Fr.*
 Day, Wolfram Charles Franklin,

Soph.

Dearborn, Henry, *Sr.*
 Debevoise, Elliott, *Soph.*
 de Bronkart, Eugene Hoyne, *Sr.*
 Deely, John Martin, *Soph.*
 de Lagerberg, Guy Eugene, *Sr.*
 DeLand, Charles Airmet, Jr., *Jr.*
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 Dempsey, Ira Millard, *Soph.*
 Dennison, David Short, *Soph.*
 Denny, Cary Freeman, *Fr.*
 DEWEY, HARRY PINNEO, *Trustee*
 Dewey, John Clarke, Jr., *Sr.*
 de Windt, Delano, *Fr.*

DICKERMAN, SHERWOOD OWEN,
Asst. Prof.

Dickinson, Ashley Weed, *Jr.*

DOAN, THOMAS WORTH, *Asst.*

Doane, Franklin Clyde, *Soph.*

DODGE, SAMUEL DOUGLAS,
Alumni Visitor

DOUGHTY, WILLIAM HOWARD, JR.,
Asst. Prof.

Driscoll, Keith Francis, *Soph.*

DROPPERS, GARRETT, *Prof.*

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Duffield, Norman, *Jr.*

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Fr.

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Eells, Howard Parmelee, Jr., *Soph.*

Ely, Charles Franklyn, *Jr.*

Emerson, Hobart Bigelow, *Fr.*

Emery, Steuart MacKie, *Soph.*

Ernst, George Goodman, *Soph.*

Evans, Samuel Scriven, Jr., *Jr.*

EVELETH, LUCY MEARS,
Library Asst.

Eyre, Beverley Montagu, *Sr.*

Fancher, George Carlton, *Fr.*

Faunce, George, Jr., *Fr.*

Fay, Willis Ward, *Soph.*

Fayen, George Siemers, *Fr.*

Ferguson, John William, Jr., *Soph.*

FERRY, FREDERICK CARLOS,
Dean and Prof.

Field, Herbert Edward, *Jr.*

Field, William Hinrichs, *Sr.*

Fielding, Richard Starbuck, *Sr.*

Finlay, George Dick, Jr., *Fr.*

Fish, Irving Duncan, *Sr.*

FISHER, HESTER PAIGE,
Library Asst.

Flanders, Talbot, *Sr.*

Fletcher, Loren Albert, *Sr.*

Flynt, Henry Needham, *Fr.*

Fowler, Herbert Carey, *Fr.*

Fowler, John Eliot, *Sr.*

Fox, James Charles, Jr., *Fr.*

Frazier, Lyman Sheridan, *Soph.*

Freeman, Edward Livingston, *Sr.*

Freeman, John Wilson, *Fr.*

French, Herbert Nichols, *Fr.*

French, Stephen Luther, *Jr.*

Frink, Herbert Lincoln, *Soph.*

Funk, William Harris, *Fr.*

Furness, Thomas Foster, *Soph.*

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Garfield, John Newell, *Soph.*

Garfield, Mason, *Jr.*

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Geer, Russel Mortimer, *Fr.*

Geier, Frederick Virginius, *Fr.*

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Gildersleeve, Roger Morton, *Soph.*

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 Griffin, Bulkley Southworth, *Fr.*
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Trustee

GROSVENOR, WILLIAM MERCER,
Trustee

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 Hamerslag, Robert Joseph, *Soph.*
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 Hayden, Charles Myron, *Soph.*
 Hayes, George McGill, *Fr.*
 Haynes, George Emerson, *Jr.*
 Haynes, Laurence Stanford, *Fr.*
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 Herrick, James Frederic, *Jr.*
 Herrington, Byron Moore, *Soph.*
 Hewat, Frederic Armitage, *Sr.*
 HEWITT, JOHN HASKELL,

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HEWITT, THEODORE BROWN, *Inst.*
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 Heywood, Philip Butler, *Sr.*
 Higinbotham, George William, *Jr.*

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 Hoar, Daniel Francis, *Sr.*
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 Hodge, Richard Hallaran, *Soph.*
 HOLLISTER, WILLIAM HENRY, JR.,
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 Horton, Herbert Roy, *Soph.*
 Hotchkiss, Henry Greene, *Sr.*
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 HOWES, GEORGE EDWIN, *Prof.*
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 Hubbell, John Platt, *Sr.*
 Hubbell, Sherwood, *Fr.*
 Hunnewell, Norman Frothingham,
Fr.

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 Jacob, Leonard, 2d, *Fr.*
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 Jones, David Gale, *Jr.*
 Jones, Henry Eugene, Jr., *Fr.*
 Jones, Herbert Du Noyer, *Jr.*
 Jones, Jay Sylvester, Jr., *Fr.*
 Jordan, George Cyril, *Fr.*
 Judd, Willis Webster, *Sr.*
 Keller, Daniel Schneck, *Soph.*

Miller, John Richardson, *Sr.*
Moffat, David, *Jr.*
Moffat, William Lincoln, *Jr., Fr.*
Molthan, Emil Henry, *Fr.*
Monroe, Ellis, *Soph.*
Montague, Warner Johnson, *Fr.*
Moody, Willson Bridges, *Jr.*
Morgan, Barry Lincoln, *Soph.*
Mortenson, Charles Nelson, *Sr.*
MORTON, ASA HENRY, *Prof.*
Mosher, John Chapin, *Jr.*
Mygatt, Francis Stetson, *Sr.*
Narten, Henry Siller, *Sr.*
Nash, Edwin Gates, *Soph.*
Nathan, Edgar Joshua, *Jr., Sr.*
Naumburg, Robert Elkan, *Sr.*
NETHERWOOD, EMMA LOUISE,
Stenographer
NETHERWOOD, HELEN MAY,
Stenographer
Newborg, Leonard David, *Fr.*
Newell, Caryl Hammond, *Fr.*
Newton, James Fay, *Soph.*
Newton, Robert Ray, *Jr.*
Nightingale, John Kewley Hen-
shaw, *Jr., Sr.*
Northrop, Addison Hurlbutt, *Jr.*
Nusbickel, Thomas Raymond, *Sr.*
Oakes, Edward Francis, *Fr.*
Oakley, Charles Stott, *Jr., Fr.*
Ober, Carleton Kingsley, *Fr.*
O'Brien, Joseph Aloysius Fivez,
Soph.
Olmsted, Charles Frederic, *Jr.,*
Soph.
Olmsted, Franklin Fessenden,
Soph.
Oppenheimer, Robert Julien, *Fr.*
Orvis, Schuyler Adams, *Fr.*
Overton, Carlton Bynner, *Fr.*
Pack, Arthur Newton, *Jr.*
Page, Jerome Foote, *Sr.*

Palmer, Ralph Finch, *Soph.*
Parsons, Carle Lawyer, *Sr.*
Parsons, Edgar Burnside, *Soph.*
Patterson, Andrew Fleming, *Soph.*
Paton, William Kennell, *Fr.*
Pattou, Albert Brace, *Fr.*
Payne, Harold, *Fr.*
Payne, John Adams, Jr., *Fr.*
Payson, Phillips Merrill, *Fr.*
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Perry, Reginald Dwight, *Jr.*
Phelps, Charles Blanchard, Jr., *Jr.*
Phillips, Charles Swayne, *Sr.*
Pillsbury, Alfred Perkins, *Jr.*
Pitcher, Dwight Copley, *Sr.*
Porter, Edward Erskine, *Soph.*
Porter, Joseph Douglas, *Jr.*
Potter, Philip Childs, *Soph.*
Potwine, George Stephen, *Soph.*
Powell, Edward Merriam, *Sr.*
Powell, Elisha Barclay, Jr., *Fr.*
Powers, Kent Holeman, *Fr.*
Pratt, Dwight Harold, *Soph.*
Pratt, Henry Townsend, *Soph.*
PRATT, JAMES BISSETT, *Asst. Prof.*
Pratt, Schuyler, *Sr.*
Prince, Leonard Sidney, *Jr.*
Prindle, John Guy, *Sr.*
RAMSEY, ROBERT, *Trustee*
Rand, Wallace, Jr., *Sr.*
Reed, Edward Lyndal, *Fr.*
REES, BYRON JOHNSON, *Asst. Prof.*
Remer, David, *Soph.*
Reynolds, Kenneth Gray, *Fr.*
Rhoades, William Schreuder, *Fr.*
RICE, RICHARD AUSTIN, *Prof. Emer.*

Rice, William Thompson, *Sr.*
 Richards, Donald Lewis, *Fr.*
 Richards, George Harrison, *Fr.*
 RIDLON, MARGARET, *Library Asst.*
 Rising, Francis Russell, *Soph.*
 Robinson, Charles Henry, Jr., *Soph.*
 Robinson, John Harold, *Sr.*
 Robison, David James, *Jr.*
 Rockwood, Albert Wright, *Jr.*
 Rockwood, Richard Burton, *Fr.*
 Rogers, James Pratt, *Jr.*
 Rogers, John Stanton, *Jr.*
 Rothfeld, Laurence, *Sr.*
 Rothfeld, Tracy Lesman, *Soph.*
 Royal, John Douglas Miller, *Jr.*
 Rudnick, Louis, *Soph.*
 Russell, Hamilton Harris, *Fr.*
 RUSSELL, JOHN EDWARD, *Prof.*
 Russell, Joseph Jones, *Fr.*
 Sabin, Charles Dwight, Jr., *Fr.*
 Salmon, Fred Dunning, *Fr.*
 SALTER, SUMNER, *Direct. of Music*
 Schauffler, Allen Manvel, *Sr.*
 Schreiber, George Harold, *Fr.*
 Seaman, Philip Huntington, *Fr.*
 SEELEY, CHARLES FREDERICK,
 Director of Gym.
 Seibert, Walter Eppley, *Fr.*
 Shattuck, Paul Clements, *Fr.*
 Shaw, Phillips Bassett, *Fr.*
 Sheaffer, Clinton Whitcomb, *Soph.*
 Sheedy, Winthrop Lawrence, *Sr.*
 SHEPARD, ELMER IRWIN, *Asst. Prof.*
 Shepardson, Douglas Auld, *Fr.*
 Sherwood, Malcolm Clarke, *Fr.*
 Shields, Robert McCormick, *Soph.*
 Shipton, George Marsden, *Sr.*
 Short, Livingston Lyman, *Sr.*
 SHRADER, JAMES EDMOND, *Inst.*
 Shriver, Alfred, *Soph.*
 SIDLEY, WILLIAM PRATT,
 Alumni Officer

Skerry, Amory Standish, *Fr.*
 Sly, John Lazear, *Jr.*
 Smith, Andrew Raymond, *Soph.*
 Smith, Bruce Messer, *Soph.*
 Smith, Francis Seifert, Jr., *Jr.*
 Smith, George William, *Jr.*
 Smith, Irving Frederick, *Sr.*
 Smith, Kenneth Gladstone, *Fr.*
 Smith, Lewis Holman, *Jr.*
 Smith, Merritt Haviland, Jr., *Sr.*
 Smith, Sydney Reed, *Fr.*
 SMITH, THEODORE CLARKE, *Prof.*
 Smith, Woodruff, *Jr.*
 Sommerville, William Boyd, Jr., *Fr.*
 Spencer, Eben Selden, *Fr.*
 Spring, Harold Allen, *Soph.*
 SPRING, LEVERETT WILSON,
 Prof. Emer.
 Squire, Thomas Stuart, *Soph.*
 Staats, Robert Parker, *Jr.*
 Standish, James Darrow, Jr., *Sr.*
 STARR, LOUIS MORRIS,
 Alumni Visitor
 Statler, Harry Arthur, *Fr.*
 Stearns, Stuart Olmstead, *Fr.*
 Stebbins, John, *Fr.*
 Stein, Emil Robert, Jr., *Sr.*
 Stetson, Allyn Fillmore, *Fr.*
 STETSON, FRANCIS LYNDE, *Trustee*
 Stevens, John Dickinson, *Jr.*
 Stickney, Raymond DuBois, *Fr.*
 Stone, Emerson Law, *Fr.*
 Stone, Jacob Chauncey, *Jr.*
 Surls, Joseph Kiddoo, *Sr.*
 Swain, Robert Burrough, *Soph.*
 Swift, Arthur Lessner, Jr., *Sr.*
 TAYLOR, ARTHUR VINCENT,
 Alumni Visitor
 TAYLOR, ROBERT LONGLEY, *Prof.*
 Temple, Arthur, *Fr.*
 Thayer, Howell Kellogg, *Fr.*
 Thomas, Luke Garretson, *Jr.*

Thompson, Charles Stanley, *Sr.*
Thompson, Wallace Bradley, *Soph.*
Titus, Edward Hatch, Jr., *Jr.*
Titus, Joseph Haas, *Soph.*
Toll, Oliver Wolcott, *Sr.*
Tomkins, Frederick, *Fr.*
Toolan, Cyprian Andrew, *Fr.*
Townsend, John Dunham, *Jr.*
Trevor, George Wheeler, *Sr.*
Troy, William Mandeville, *Sr.*
Turner, Mason, *Soph.*
Turner, Thomas McIlvaine, *Fr.*
Turner, William Bradford, *Jr.*
Tyler, John Cowperthwait, *Soph.*
Utle, Charles Bach, *Sr.*
Van Cise, Clinton Spooner, *Jr.*
VanCott, John Daire, *Fr.*
Van Doren, Durand Halsey, *Jr.*
van Hoevenberg, Rudolf deLuce,
Soph.
Van Slyck, George Whitfield, *Soph.*
Van Steenberg, James Taylor, *Jr.*
Vary, Calvin Pitts, *Jr.*
Vietor, Frederick Albert, *Sr.*
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Alumni Officer
Young, Max Lewis, *Jr., Fr.*
Young, Walter Halsey, *Sr.*
Zimmerman, Harry Alfred, *Jr., Fr.*

INDEX

	PAGE		PAGE
ADDRESSES of students	140	CHAPEL, Attendance	101
ADMINISTRATION, Committee on	15	CHEMISTRY, Courses in	91
ADMINISTRATION, Officers of	14	Laboratory	107
ADMISSION, Requirements for	29	CLARK SCHOLARSHIP	121
by certificate	51	CLASSICAL SOCIETY	119
College Entrance Exam- ination Board	49	COLLEGE Entrance Examina- tion Board	49
Examinations for	49	COMMENCEMENT APPOINT- MENTS, 1912	136
Groups	29	COMMITTEES, Faculty	15
to advance standing	54	Trustees	8
Requirements for		COMMONS	129
English	31	COURSES, Completion of	58
French	35	Anticipation of	54
German	37	COURSES of Instruction	64
Greek	40	Tabular Exhibit of	60
History	40	CURRICULUM	56
Latin	41		
Mathematics	44	DANTE, Course in	78
ADVISORY COMMITTEE	15	DEAN, Duties of (<i>see</i> At- tendance)	101
ALUMNI OFFICERS AND VIS- ITORS	9	DEGREES, Conditions for granting	58
ANTICIPATION of College Courses	54	Conferred in 1912	137
ASTRONOMY, Courses in	88	Requirements for B.A. ...	58
Observatories, etc.	108	Requirements for M.A. ..	101
ATTENDANCE	101		
		ECONOMICS, Courses in	79
BIOLOGY, Courses in	88	ENGLISH, Courses in	64
Laboratory	107	for entrance	31
BOTANY, Courses in	90	EXAMINATIONS, for admission	49
BUILDINGS	28	Preliminary	50
		Semi-annual (<i>see</i> Comple- tion of courses)	58
CALENDAR for College Year	3	for Clark Scholarship	121
CERTIFICATES FOR ADMISSION	51		

	PAGE		PAGE
EXAMINATIONS,		HISTORY,	
for M.A.	101	for entrance	40
EXHIBIT of Freshman Stud-		HONOR SYSTEM	100
ies	62	HONORS	118
EXHIBIT of Divisions and		awarded at Commence-	
groups	60	ment, 1912	133
EXPENSES	126	HYGIENE AND PHYSIOLOGY,	
Treasurer's bills	126	Courses in	97
General expenses—board,		INFIRMARY	111
etc.	126	ITALIAN, Courses in	78
Rooms	127		
FACULTY, List of	10	JUNIOR CLASS, List of	143
Committees	15	LABORATORIES, THOMPSON ...	107
FEES	126	LABORATORY FEES, etc.	126
FIELD SPORTS	120	LATIN, Courses in	74
FRENCH, Courses in	76	for entrance	41
for entrance	35	LIBRARY	106
FRESHMAN CLASS, List of ..	149	LYCEUM OF NATURAL HIS-	
		TORY	119
GEOLOGY, Courses in	92	MAP	Frontispiece
Museum	109	MATHEMATICS, Courses in ..	94
GERMAN, Courses in	69	for entrance	44
for entrance	37	OBSERVATORIES	108
GOVERNMENT AND POLITICAL		OFFICERS OF ADMINISTRATION	14
SCIENCE, Courses in	80	OFFICERS OF INSTRUCTION ...	10
GRADUATE STUDENTS,		Alumni	9
Candidates for the degree		ORATORY, Courses in	68
of M.A., List of	139		
GRADUATION in three years ..	54	PHI BETA KAPPA	117
GREEK, Courses in	71	PHILOSOPHY, Courses in	84
for entrance	40	PHYSICAL TRAINING	98
GREEK FELLOWSHIP	120	PHYSIOLOGY, Courses in	97
GROUP SYSTEM	56	PHYSICS, Courses in	96
GROUPS, Admission	29	Laboratory	108
of hours	63	POLITICAL SCIENCE	80
GYMNASIUM	110	PREACHERS to the College ..	105
		PRELIMINARY Examinations	49
HISTORICAL SKETCH OF COL-			
LEGE	17		
HISTORY, Courses in	81		

	PAGE		PAGE
PRESIDENTS, List of	7	SCHOLARSHIPS, List of funds	124
PRIZES	112	Basis of award	121
Adriance	116	General	121
Benedict	112	Holders, List of	134
Canby Athletic	116	Horace F. Clark prize ...	121
Conant, F. S.	116	Honor	121
Dewey	114		
Graves	113	SENIOR CLASS, List of	140
Greek	117	SOPHOMORE CLASS, List of ..	146
Lathers (Gold Medal) ...	114	SPANISH, Courses in	78
Philadelphia Alumni Cup	117	STUDENTS, by Classes	140
Rhetorical	112	Candidates for M.A.	139
Rice	113	Summary by Classes	154
Rice (Book)	112	Summary by States	154
Van Vechten	113	STUDIES, Tabular Exhibit of	60
David A. Wells	115		
Awarded at Commence-		THOMPSON Course of Enter-	
ment, 1912	130	tainments	120
PSYCHOLOGY	84	TREASURER'S Bills	126
		TRUSTEES, List of	7
RECORDS AND REPORTS	104	Committees	8
REGISTRATION	100	TUITION	126
RELIGIOUS EXERCISES	105		
ROOMS, College	127		